

AmeriWest Electric Corp.

AmeriWest  Electric Corp.

SAFETY DATA SHEETS

AmeriWest Electric Corp.

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GHS PICTOGRAMS AND HAZARDS

OSHA REGULATIONS

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- Antifreeze & Coolant Cool 5050 Prediluted Peak
- Antifreeze & Coolant Cool Extended Life Concentrate Peak
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- Cutting Oil RIDGID Dark Oil
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2) ELECTRICAL PRODUCTS

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 - 3M Brand Fire Barrier CP-25WB+
 - 3M FireBarrier™ Sealant IC 15 WB+
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- Galvanized-products allied
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- PVC Primer purple oatey
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- CADWELD_PLUS_Erico
- CADWELD_SM_Erico
- Carbon Dioxide Medipure CO2
- HeliStar Shielding Gas Mixtures of He Ar and O2

4) PAINTS & COATINGS

- Paint Zinc It 350g Aerosol CRC 2085
- Paint Interior/Exterior Paint Glossy White (OSHA White) KRYLON
- Paint Interior/Exterior Paint Ultra Flat Black KRYLON
- Paint Rust Proof Enamel Spray Paint - OSHA Red CRC
- Rust Proof Enamel Spray Paint - OSHA White CRC
- Paint Upside Down Marking Paints - Alert Orange CRC
- Upside Down Marking Paints-Safety Red CRC
- Upside Down Marking Paints - White CRC
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5) OFFICE SUPPLIES

- Adhesive Gorilla Glue
- Adhesive Loctite Blue
- Adhesive Super Glue
- Cleaner Glass and Surface 409
- Cleaner spine-sol Clorox
- Cleaner Windex
- Cleanser Soft with Chlorine – Ajax
- Hi-Liter
- Marks-A-Lot
- Protectant Ultra Shine Armor All
- Wipes Multi-purpose wipes IDEAL

6) CONCRETE CEMENT AND CAULK

- Cement Masonry_Mortar_Cement_ Lafarge_
- Cement Portland_Cement_Lafarge_Cement-Mortar_lime_sand amx_400_portland
- Chalk_Red_Permanent IRWIN
- Chalk-Blue-Standard IRWIN
- Chalk-Ind-Blue-Perm IRWIN

GHS Pictograms and Hazards

Health Hazard



- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Flame



- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

Exclamation Mark



- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer
(Non-Mandatory)

Gas Cylinder



- Gases Under Pressure

Corrosion



- Skin Corrosion/ Burns
- Eye Damage
- Corrosive to Metals

Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides

Flame Over Circle



- Oxidizers

Environment (Non-Mandatory)



- Aquatic Toxicity

Skull and Crossbones



- Acute Toxicity
(fatal or toxic)



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OSHA[®]Brief

Hazard Communication Standard: Safety Data Sheets

The Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012, requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards. The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format. This brief provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well). In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in Appendix D of 29 CFR 1910.1200. The SDS preparers may also include additional information in various section(s).

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., fire fighting). This information should be helpful to those that need to get the information quickly. Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

A description of all 16 sections of the SDS, along with their contents, is presented below:

Section 1: Identification

This section identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).¹

Section 2: Hazard(s) Identification

This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category¹).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.
- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3: Composition/Information on Ingredients

This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

Mixtures

- Same information required for substances.
- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
 - Present above their cut-off/concentration limits or
 - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
 - A trade secret claim is made,
 - There is batch-to-batch variation, or
 - The SDS is used for a group of substantially similar mixtures.

Chemicals where a trade secret is claimed

- A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

Section 4: First-Aid Measures

This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5: Fire-Fighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective equipment or precautions for firefighters.

Section 6: Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up)

Section 7: Handling and Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements)

Section 8: Exposure Controls/Personal Protection

This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).
- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

Section 9: Physical and Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture. The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Upper/lower flammability or explosive limits;
- Odor;
- Vapor pressure;
- Odor threshold;
- Vapor density;
- pH;
- Relative density;
- Melting point/freezing point;
- Solubility(ies);
- Initial boiling point and boiling range;

- Flash point;
- Evaporation rate;
- Flammability (solid, gas);
- Partition coefficient: n-octanol/water;
- Auto-ignition temperature;
- Decomposition temperature; and
- Viscosity.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property. Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential

Section 10: Stability and Reactivity

This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other. The required information consists of:

Reactivity

- Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

Chemical stability

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

Other

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations, or environmental conditions that may lead to hazardous conditions).
- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

Section 11: Toxicological Information

This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA

Section 12: Ecological Information (non-mandatory)

This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment. The information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
- Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient (K_{ow}) and the bioconcentration factor (BCF), where available.
- The potential for a substance to move from the soil to the groundwater (indicate results from adsorption studies or leaching studies).
- Other adverse effects (e.g., environmental fate, ozone layer depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and/or global warming potential).

Section 13: Disposal Considerations (non-mandatory)

This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. To minimize exposure, this section should also refer the reader to Section 8 (Exposure Controls/Personal Protection) of the SDS. The information may include:

- Description of appropriate disposal containers to use.
- Recommendations of appropriate disposal methods to employ.
- Description of the physical and chemical properties that may affect disposal activities.
- Language discouraging sewage disposal.
- Any special precautions for landfills or incineration activities

Section 14: Transport Information (non-mandatory)

This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea. The information may include:

- UN number (i.e., four-figure identification number of the substance)¹.
- UN proper shipping name¹.
- Transport hazard class(es)¹.
- Packing group number, if applicable, based on the degree of hazard².
- Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)).
- Guidance on transport in bulk (according to Annex II of MARPOL 73/78³ and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code))).
- Any special precautions which an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises (indicate when information is not available).

Section 15: Regulatory Information (non-mandatory)

This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS. The information may include:

- Any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, Department of Transportation, Environmental Protection Agency, or Consumer Product Safety Commission regulations)

Section 16: Other Information

This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

Employer Responsibilities

Employers must ensure that the SDSs are readily accessible to employees for all hazardous chemicals in their workplace. This may be done in many ways. For example, employers may keep the SDSs in a binder or on computers as long as the employees have immediate access to the information without leaving their work area when needed and a back-up is available for rapid access to the SDS in the case of a power outage or other emergency. Furthermore, employers may want to designate a person(s) responsible for obtaining and maintaining the SDSs. If the employer does not have an SDS, the employer or designated person(s) should contact the manufacturer to obtain one.

References

OSHA, 29 CFR 1910.1200(g) and Appendix D. United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), third revised edition, United Nations, 2009. These references and other information related to the revised Hazard Communication Standard can be found on OSHA's Hazard Communication Safety and Health Topics page, located at: <http://www.osha.gov/dsg/hazcom/index.html>.

Disclaimer: This brief provides a general overview of the safety data sheet requirements in the Hazard Communication Standard (see 29 CFR 1910.1200(g) and Appendix D of 29 CFR 1910.1200). It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change over time, the reader should consult current OSHA interpretations and decisions by the Occupational Safety and Health Review Commission and the courts for additional guidance on OSHA compliance requirements. Please note that states with OSHA-approved state plans may have additional requirements for chemical safety data sheets, outside of those outlined above. For more information on those standards, please visit: <http://www.osha.gov/dcsp/osp/statestandards.html>.

This is one in a series of informational briefs highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential



U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

DSG BR-3514 2/2012

¹ Chemical, as defined in the HCS, is any substance, or mixture of substances.

² Found in the most recent edition of the United Nations Recommendations on the Transport of Dangerous Goods.

³ MARPOL 73/78 means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended



SAFETY DATA SHEET

1. Product And Company Identification

SDS ID: SDS508
 PRODUCT NAME: **Prestone® 50/50 Prediluted Engine Coolant/Antifreeze**
Prestone® 50/50 Ready-to-Use Antifreeze/Coolant
 PRODUCT NUMBER: 71175, AF2100, 71183, AF2725, PRES01R, PRES04R, AF2050ML, AF2050M, AF2050M19, AF2050M200, 71217, AF2100UK, AF2100PL, AF2100LCZ, AF2100LHR, AF2100LD, AF2100LRU, AF2100RU, AF2100S/F, AF2100LT/F, AF2100S/FC, AF2100-Retro/F, 65077, AF2100/GF, AF2100/GFC, AF2725/GF, AF2100/GXF, AF2100/GXF-HT, 71175/GF, 71175/GFC, 71175/GFC3
 FORMULA NUMBER: YA-956BY-P50, YA-956BY-P50-B, YA-956BY-P50M, YA-956BY-P50M-B, YA-992-P50

MANUFACTURER: Prestone Products Corporation
 Danbury, CT 06810-5109

CANADIAN OFFICE: FRAM Group (Canada), Inc.
 Mississauga, Ontario L5L 3S6

MEDICAL EMERGENCIES AND ALL OTHER INFORMATION PHONE NUMBER:

(800)890-2075 (in the US)
 (800)668-9349 (in Canada)

TRANSPORTATION EMERGENCY PHONE NUMBER (Chemical Spills and Transport Accidents only):

CHEMTREC 1-800-424-9300 (in the US)
 CANUTEC (613)996-6666 (in Canada)

SDS DATE OF PREPARATION/REVISION: 04/16/14

PRODUCT USE: Automobile antifreeze – consumer product
 RESTRICTIONS ON USE: None identified

2. Hazards Identification

GHS/HAZCOM 2012 Classification:

Health	Physical
Acute Toxicity Category 4 Specific Target Organ Toxicity – repeated exposure Category 2 Reproductive Toxicity Category 2	Not Hazardous

Label Elements



WARNING!
 H302 Harmful if swallowed.
 H361d Suspected of damaging the unborn child.
 H373 May cause damage to kidneys through prolonged or repeated exposure.



Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe mist or vapors.
- P264 Wash exposed skin thoroughly after handling.
- P270 Do not eat, drink, or smoke when using this product.
- P281 Use personal protective equipment as required.

Response:

- P301 + P312 IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
- P330 Rinse mouth.
- P308 + P313 IF exposed or concerned: Get medical advice.

Disposal:

- P405 Store locked up.
- P501 Dispose of contents and container in accordance with local and national regulations.

3. Composition/Information On Ingredients

Component	CAS No.	Amount
Ethylene Glycol	107-21-1	45-55
Water	7732-18-5	45-55
Diethylene Glycol	111-46-6	0-5
2-Ethyl Hexanoic Acid, Sodium Salt	19766-89-3	0-5

The exact concentrations are a trade secret.

4. First Aid Measures

INHALATION: Remove the victim to fresh air. If breathing has stopped administer artificial respiration. If breathing is difficult, have medical personnel administer oxygen. Get medical attention.

SKIN CONTACT: Remove contaminated clothing. Immediately wash contacted area thoroughly with soap and water. If irritation persists, get medical attention.

EYE CONTACT: Immediately flush eyes with large amounts of water for 15 minutes. Get medical attention if irritation persists.

INGESTION: Seek immediate medical attention. Immediately call local poison control center or go to an emergency department. Never give anything by mouth to or induce vomiting in an unconscious or drowsy person.

MOST IMPORTANT SYMPTOMS: May cause eye irritation. Inhalation of mists may cause nose and throat irritation and nervous system effects. Ingestion may cause abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, malaise, blurring of vision, irritability, back pain, decrease in urine output, kidney failure, and central nervous system effects.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NEEDED: Seek immediate medical attention for large ingestions.

NOTES TO PHYSICIAN: The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. The combination of metabolic acidosis, an osmol gap and oxalate crystals in the urine is evidence of ethylene glycol poisoning. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene



PRESTONE® 50/50 PREDILUTED ENGINE COOLANT/ANTIFREEZE
PRESTONE® 50/50 READY-TO-USE ANTIFREEZE/COOLANT

SDS508

Date Prepared: 04/16/2014

glycol. Respiratory support with mechanical ventilation may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth, and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing and dysphagia.

Ethanol is antidotal and its early administration may block the formation of nephrotoxic metabolites of ethylene glycol in the liver. The objective is to rapidly achieve and maintain a blood ethanol level of approximately 100 mg/dl by giving a loading dose of ethanol followed by a maintenance dose. Intravenous administration of ethanol is the preferred route. Ethanol blood levels should be checked frequently. Hemodialysis may be required. 4-Methyl pyrazole (Fomepizole®), a potent inhibitor of alcohol dehydrogenase, has been used therapeutically to decrease the metabolic consequences of ethylene glycol poisoning. Fomepizole® is easier to use clinically than ethanol, does not cause CNS depression or hypoglycemia and requires less monitoring than ethanol. Additional therapeutic modalities which may decrease the adverse consequences of ethylene glycol metabolism are the administration of both thiamine and pyridoxine. As there are complicated and serious overdoses, we recommend you consult with the toxicologists at your poison control center.

5. Firefighting Measures

SUITABLE EXTINGUISHING MEDIA: Use any media appropriate for the surrounding fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: A solid stream of water or foam directed into hot, burning liquid can cause frothing. Burning may produce carbon monoxide and carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES: Do not spray pool fires directly. Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

6: Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Wear appropriate protective clothing and equipment (See Section 8).

METHODS AND MATERIALS FOR CONTAINMENT/CLEANUP: Collect with absorbent material and place in appropriate, labeled container for disposal or, if permitted flush spill area with water.

7. Handling and Storage

PRECAUTIONS FOR SAFE HANDLING:

Harmful or Fatal if Swallowed. Do not drink antifreeze or solution. Avoid eye and prolonged or repeated skin contact. Avoid breathing vapors or mists. Wash exposed skin thoroughly with soap and water after use. Keep container away from open flames and excessive heat. Do not reuse empty containers unless properly cleaned. Empty containers retain product residue and may be dangerous. Do not cut, weld, drill, etc. containers, even empty.

Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without any obvious ignition sources. Published "autoignition" or "ignition" temperatures cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Use of this product in elevated temperature applications should be thoroughly evaluated to assure safe operating conditions.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Do not store in opened or unlabeled containers. Store away from excessive heat and oxidizers.

NFPA CLASSIFICATION: IIIB (May qualify for the following consumer quantity exemption: Consumer products that contain not more than 50 percent by volume of water-miscible flammable or combustible liquids, with the remainder of the



product consisting of components that do not burn and where packaged in individual containers that do not exceed 1.3 gal (5 L) capacity.)

8. Exposure Controls / Personal Protection

EXPOSURE GUIDELINES

CHEMICAL	EXPOSURE LIMIT
Ethylene Glycol (as aerosol)	100 mg/m ³ Ceiling ACGIH TLV
Water	None Established
Diethylene Glycol	10 mg/m ³ TWA AIHA WEEL
2-Ethyl Hexanoic Acid	None Established

APPROPRIATE ENGINEERING CONTROLS: Use general ventilation or local exhaust as required to maintain exposures below the occupational exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: For operations where the TLV is exceeded a NIOSH approved respirator with organic vapor cartridges and dust/mist prefilters or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select and use in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

GLOVES: Chemical resistant gloves such as neoprene or PVC where contact is possible.

EYE PROTECTION: Splash-proof goggles.

OTHER PROTECTIVE EQUIPMENT/CLOTHING: Appropriate protective clothing as needed to minimize skin contact.

9. Physical and Chemical Properties

APPEARANCE:	Yellow liquid	ODOR:	Characteristic odor
ODOR THRESHOLD:	None	pH:	8.4 - 9.0
MELTING/FREEZING POINT:	-34°F (-36°C)	BOILING POINT/RANGE:	226-229°F (108-109°C)
FLASH POINT:	No flash @ 216°F (102.2°C) SCC	EVAPORATION RATE:	Not determined
FLAMMABILITY (SOLID, GAS)	Not Applicable	FLAMMABILITY LIMITS:	LEL: Not determined UEL: Not determined
VAPOR PRESSURE:	< 0.1 mmHg @ 68°F	VAPOR DENSITY:	Not determined
RELATIVE DENSITY:	1.07	SOLUBILITIES	Water: Complete
PARTITION COEFFICIENT (n-octanol/water)	Not determined	AUTOIGNITION TEMPERATURE:	Not determined
DECOMPOSITION TEMPERATURE:	Not determined	VISCOSITY:	Not determined

10. Stability and Reactivity

REACTIVITY: Normally unreactive



CHEMICAL STABILITY: Stable

POSSIBILITY OF HAZARDOUS REACTIONS: Reaction with strong oxidizers will generate heat.

CONDITIONS TO AVOID: None known

INCOMPATIBLE MATERIALS: Normally unreactive, however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents, and materials reactive with hydroxyl compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide.

11. Toxicological Information

POTENTIAL HEALTH EFFECTS:

ACUTE HAZARDS:

INHALATION: May cause irritation of the nose and throat with headache, particularly from mists. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace, may produce nausea, vomiting, headache, dizziness and irregular eye movements.

SKIN CONTACT: No evidence of adverse effects from available information.

EYE CONTACT: Liquid, vapors or mist may cause discomfort in the eye with persistent conjunctivitis, seen as slight excess redness or conjunctiva. Serious corneal injury is not anticipated.

INGESTION: May cause abdominal discomfort or pain, nausea, vomiting, dizziness, drowsiness, malaise, blurring of vision, irritability, back pain, decrease in urine output, kidney failure, and central nervous system effects, including irregular eye movements, convulsions and coma. Cardiac failure and pulmonary edema may develop. Severe kidney damage which may be fatal may follow the swallowing of ethylene glycol. A few reports have been published describing the development of weakness of the facial muscles, diminishing hearing, and difficulty with swallowing, during the late stages of severe poisoning.

CHRONIC EFFECTS: Prolonged or repeated inhalation exposure may produce signs of central nervous system involvement, particularly dizziness and jerking eye movements. Prolonged or repeated skin contact may cause skin sensitization and an associated dermatitis in some individuals. Ethylene glycol has been found to cause birth defects in laboratory animals. The significance of this finding to humans has not been determined. 2-Ethyl Hexanoic Acid, Sodium Salt is suspected of causing developmental effects based on animal data.

CARCINOGENICITY LISTING: None of the components of these products is listed as a carcinogen or suspected carcinogen by IARC, NTP, ACGIH, or OSHA.

ACUTE TOXICITY VALUES:

Ethylene Glycol: LD50 Oral Rat: 4700 mg/kg
 LD50 Skin Rabbit: 9530 mg/kg

Diethylene Glycol: LD50 Oral Rat: 12,565 mg/kg
 LD50 Skin Rabbit: 11,890 mg/kg

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH:

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations 150, 1,000 and 2,500 mg/m³ for 6 hours a day throughout the period of organogenesis,



teratogenic effects were produced at the highest concentrations, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin, or swallowing of ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1,000 and 2,500 mg/m³) and developmental toxicity in with minimal evidence of teratogenicity (2,500 mg/m³). The no-effects concentration (based on maternal toxicity) was 500 mg/m³. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen; there is currently no available information to suggest that ethylene glycol caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity; exposure to high aerosol concentration is only minimally effective in producing developmental toxicity; the major route for producing developmental toxicity is perorally.

Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of carcinogenic potential for ethylene glycol has been supported by numerous invitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

In a study of Wistar rats, adverse developmental results were reported at a dose of 100 mg / kg of body weight for 2-Ethyl Hexanoic Acid, Sodium Salt.

This product contains less than 0.07% tolytriazole which has demonstrates mutagenic activity in a bacterial test system. A correlation has been established between mutagenic activity and carcinogenic activity for many chemicals. Tolytriazole has not been identified as a carcinogen or probable carcinogen by NTP, IARC, ACGIH or OSHA.

12. Ecological Information

ECOTOXICITY:

Ethylene Glycol: LC50 Fathead Minnow <10,000 mg/L/96 hr
EC50 Daphnia Magna 100,000 mg/L/48 hr
Bacterial (*Pseudomonas putida*): 10,000 mg/l
Protozoa (*Entosiphon sulcatum* and *Uronema parduczii*; Chatton-Lwoff): >10,000 mg/l
Algae (*Microcystis aeruginosa*): 2,000 mg/l
Green algae (*Scenedesmus quadricauda*): >10,000 mg/l
Diethylene Glycol: LC50 western mosquitofish >32,000 mg/L/96 hr

PERSISTENCE AND DEGRADABILITY:

Ethylene Glycol is readily biodegradable (97-100% in 2-12 days). Diethylene glycol is readily biodegradable (>70% in 19days).

BIOACCUMULATIVE POTENTIAL:

Ethylene glycol: A BCF of 10, reported for ethylene glycol in fish, Golden ide (*Leuciscus idus melanotus*), after 3 days of exposure suggests the potential for bioconcentration in aquatic organisms is low.

Diethylene glycol: An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.

MOBILITY IN SOIL: Ethylene glycol and diethylene glycol are highly mobile in soil.

OTHER ADVERSE EFFECTS: None known

13. Disposal Considerations

Dispose of product in accordance with all local, state/provincial and federal regulations.



14. Transport Information

U.S. DOT HAZARD CLASSIFICATION: Not Regulated (unless package contains a reportable quantity)

Note: IF A SHIPMENT OF A REPORTABLE QUANTITY (9,090 LBS/1,018 GAL.) IN A SINGLE PACKAGE IS INVOLVED, THE FOLLOWING INFORMATION APPLIES:

PROPER SHIPPING NAME: RQ, Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)

UN NUMBER: UN3082

PACKING GROUP: III

LABELS REQUIRED: Class 9

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

IMDG CODE SHIPPING CLASSIFICATION: Not Regulated

CANADIAN TDG CLASSIFICATION: Not Regulated

15. Regulatory Information

CERCLA SECTION 103: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for this product, based on the RQ for Ethylene Glycol (55% maximum) of 5,000 lbs., is 9090 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 311/312 HAZARD CLASSIFICATION: Acute health, chronic health

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Ethylene Glycol	107-21-1	45-55%
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PROTECTION OF STRATOSPHERIC OZONE: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CALIFORNIA PROPOSITION 65: The normal consumer use of this product does not result in exposures to chemicals known to the State of California to cause Cancer and/or Reproductive Harm above the significant risk level for carcinogens or the maximum allowable dose levels for reproductive toxins. Therefore, no warnings are required for consumer packages. Industrial or other occupational use of this product at higher frequency and using larger quantities of this product may result in exposures exceeding these levels and are labeled accordingly.

EPA TSCA INVENTORY: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the ingredients are listed on the Canadian Domestic Substances List.

CANADIAN WHMIS CLASSIFICATION: Class D - Division 2 - Subdivision A - (A very toxic material causing other toxic effects)



CANADIAN WHMIS HAZARD SYMBOLS:

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): All of the ingredients are listed on the EINECS inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances.

JAPAN: All of the ingredients of this product are listed on the Japanese Existing and New Chemical Substances (METI) List.

KOREA: All of the ingredients of this product are listed on the Korean Existing Chemicals List (KECL).

CHINA. All of the ingredients of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

PHILIPPINES All of the ingredients of this product are listed on the Philippines Inventory of Chemicals and Chemical Substances (PICCS).

16. Other Information

NFPA RATING (NFPA 704) - FIRE: 1 HEALTH: 2 INSTABILITY: 0

REVISION SUMMARY: All Sections – Section 1: Addition of formula and product numbers. Section 9: Changes to physical data ranges.

SDS Date of Preparation/Revision: April 16, 2014

This SDS is directed to professional users and bulk handlers of the product. Consumer products are labeled in accordance with Federal Hazardous Substances Act regulations.

While Prestone Products Corporation believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of the tests conducted, the data are not to be taken as a warranty or representation for which Prestone Products Corporation assumes legal responsibility. They are offered solely for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

If more information is needed, please contact: Prestone Products Corporation
69 Eagle Road
Danbury CT 06810
(800) 890-2075



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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : **PEAK Conventional Green Concentrate Antifreeze & Coolant**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Automotive Engine Antifreeze & Coolant

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300; (703) 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Oral) H302
STOT RE 2 H373

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H302 - Harmful if swallowed
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral)
Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe mist, spray, vapors
P264 - Wash affected areas thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear personal protective equipment as required
P301+P310 - If swallowed: Immediately call doctor/physician or poison center
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol	(CAS No) 107-21-1	90 - 97	Acute Tox. 4 (Oral), H302
diethylene glycol	(CAS No) 111-46-6	< 5	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
water	(CAS No) 7732-18-5	< 4	Not classified
denatonium benzoate	(CAS No) 3734-33-6	30 - 50 ppm	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek immediate medical advice. Allow the victim to rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- First-aid measures after skin contact : Remove contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes). Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label).
- First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. If eye irritation persists: Rinse immediately with plenty of water. Get medical advice/attention.
- First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes damage to organs (kidneys) (oral).
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazaole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water fog. Fine water spray. Alcohol-resistant foam. Foam. Carbon dioxide. Dry chemical powder. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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Special protective equipment for fire fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash affected areas thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -18 °C (0 °F). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethylene glycol (107-21-1)		
USA ACGIH	ACGIH Ceiling (mg/m ³)	100.00 mg/m ³
USA ACGIH	Remark (ACGIH)	Upper Respiratory Tract (URT) & Eye irritant

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Safety glasses.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

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Color	: Green
Odor	: Mild
Odor threshold	: No data available
pH 50% water solution	: 10.5 - 11
Relative evaporation rate (butylacetate=1)	: Nil
Freezing point	: -18 °C (0 °F)
Boiling point	: 158 °C (317 °F)
Flash point	: 116 °C (241 °F) [100% Ethylene Glycol] <i>ASTM D56</i>
Auto-ignition temperature	: 400 °C (752 °F) [100% Ethylene Glycol] <i>Literature</i>
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.1 mm Hg @ 20 °C
Relative vapor density at 20 °C	: No data available
Specific Gravity	: 1.12
Density	: 1.12 kg/l (9.3 lbs/gal)
Solubility	: Water: Complete
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: 3.2 - 15.3 vol %

9.2. Other information

VOC content : 0.00 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from any flames or sparking source. Extremely high or low temperatures.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Fume. Alcohols. Aldehydes. Ethers.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

ethylene glycol (107-21-1)	
LD50 oral rat	> 5,000 mg/kg (Rat)
ATE US (oral)	500 mg/kg bodyweight
diethylene glycol (111-46-6)	
LD50 oral rat	12,565 mg/kg (Rat)
LD50 dermal rabbit	11,890 mg/kg (Rabbit)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	11,890 mg/kg bodyweight

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denatonium benzoate (3734-33-6)	
LD50 oral rat	584 mg/kg (Rat)
LD50 dermal rabbit	> 2,000 mg/kg (Rabbit)
ATE US (oral)	584 mg/kg bodyweight
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

SECTION 12: Ecological information

12.1. Toxicity

ethylene glycol (107-21-1)	
LC50 fish 1	53,000 mg/l (96 h; Pimephales promelas; Static system)
EC50 Daphnia 1	> 10,000 mg/l (24 h; Daphnia magna)
LC50 fish 2	40,761 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Static system)
Threshold limit algae 1	> 10,000 mg/l (168 h; Scenedesmus quadricauda)
Threshold limit algae 2	2,000 mg/l (192 h; Microcystis aeruginosa)
diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000 ppm (24 h; Carassius auratus)
LC50 other aquatic organisms 1	1,174 mg/l (Xenopus laevis)
EC50 Daphnia 1	> 10,000 mg/l (24 h; Daphnia magna)
LC50 fish 2	61,072 ppm (168 h; Poecilia reticulata)
TLM fish 1	> 32,000 mg/l (96 h; Gambusia affinis)
TLM other aquatic organisms 1	> 1,000 ppm (96 h)
Threshold limit other aquatic organisms 1	1,174 mg/l (72 h; Xenopus laevis; Toxicity test)
Threshold limit other aquatic organisms 2	10,745 mg/l (16 h; Protozoa; Toxicity test)
Threshold limit algae 1	2,700 mg/l (168 h; Scenedesmus quadricauda)
Threshold limit algae 2	100 mg/l (Selenastrum capricornutum)
denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	13 mg/l (48 h; Daphnia magna)

12.2. Persistence and degradability

ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Not established.
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36 % ThOD
diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.51 g O ₂ /g substance

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ethylene glycol (107-21-1)	
ThOD	1.51 g O ₂ /g substance
BOD (% of ThOD)	0.015 % ThOD
denatonium benzoate (3734-33-6)	
Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.

12.3. Bioaccumulative potential

ethylene glycol (107-21-1)	
BCF fish 1	10 (72 h; <i>Leuciscus idus</i>)
BCF other aquatic organisms 1	0.21 - 0.6 (<i>Procambarus</i> sp.; Chronic)
BCF other aquatic organisms 2	190 (24 h; Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500). Not established.
diethylene glycol (111-46-6)	
Log Pow	-1.98
Bioaccumulative potential	Bioaccumulation: not applicable.
denatonium benzoate (3734-33-6)	
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

ethylene glycol (107-21-1)	
Surface tension	0.048 N/m (20 °C / 68 °F)
diethylene glycol (111-46-6)	
Surface tension	0.0485 N/m

12.5. Other adverse effects

Effect on ozone layer	: No known effect on the ozone layer
Effect on global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.

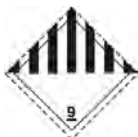
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT	
Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III
UN-No.(DOT)	: 3082
DOT NA no.	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s.
Department of Transportation (DOT) Hazard Classes	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)



DOT Symbols	: G - Identifies PSN requiring a technical name
Packing group (DOT)	: III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203

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DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Other information	: Non Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package).

ADR

No additional information available

Transport by sea

UN-No. (IMDG) : Not regulated by IMDG (in quantities under 5,000 lbs in any one inner package)

Air transport

UN-No.(IATA) : Not regulated by IATA (in quantities under 5,000 lbs in any one inner package)

SECTION 15: Regulatory information

15.1. US Federal regulations

PEAK Conventional Green Concentrate Antifreeze & Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb(s)
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Ethylene glycol is subject to Tier 1 and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting	Ethylene glycol is subject to Form R Reporting requirements.
diethylene glycol (111-46-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
denatonium benzoate (3734-33-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

PEAK Conventional Green Concentrate Antifreeze & Coolant	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

WHMIS Classification



Class D Division 2
Subdivision A - Very
toxic material
causing other toxic
effects

EU-Regulations

No additional information available

PEAK Conventional Green Concentrate Antifreeze & Coolant

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Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

PEAK Conventional Green Concentrate Antifreeze & Coolant

DSL (Canada): The intentional ingredients of this product are listed
ECL (South Korea): The intentional ingredients of this product are listed.
EINECS (Europe): The intentional ingredients of this product are listed
ENCS (Japan): The intentional ingredients of this product are listed

15.3. US State regulations

ethylene glycol (107-21-1)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard

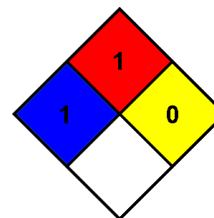
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.



Peak Cool 50/50 Prediluted Antifreeze & Coolant

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : **Peak Cool 50/50 Prediluted Antifreeze & Coolant**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Automotive Engine Antifreeze & Coolant

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300; (703) 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Oral) H302
Repr. 2 H361
STOT RE 2 H373

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302 - Harmful if swallowed
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral)

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe mist, spray, vapors
P264 - Wash affected areas thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear personal protective equipment as required
P301+P310 - If swallowed: Immediately call doctor/physician or poison center
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Peak Cool 50/50 Prediluted Antifreeze & Coolant

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol	(CAS No) 107-21-1	<= 50	Acute Tox. 4 (Oral), H302
water	(CAS No) 7732-18-5	< 50	Not classified
diethylene glycol	(CAS No) 111-46-6	< 3	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
potassium 2-ethylhexanoate	(CAS No) 3164-85-0	< 2	Repr. 2, H361
denatonium benzoate	(CAS No) 3734-33-6	30 - 50 ppm	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek immediate medical advice. Allow the victim to rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- First-aid measures after skin contact : Remove contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes). Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label).
- First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. If eye irritation persists: Rinse immediately with plenty of water. Get medical advice/attention.
- First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes damage to organs (kidneys) (oral). Suspected of damaging fertility or the unborn child.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazaole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water fog. Fine water spray. Alcohol-resistant foam. Foam. Carbon dioxide. Dry chemical powder. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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Special protective equipment for fire fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash affected areas thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -37 °C (-34 °F). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethylene glycol (107-21-1)

USA ACGIH	ACGIH Ceiling (mg/m ³)	100.00 mg/m ³
USA ACGIH	Remark (ACGIH)	Upper Respiratory Tract (URT) & Eye irritant

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Safety glasses.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

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Color	: orange
Odor	: mild
Odor threshold	: No data available
pH	: 8
Relative evaporation rate (butylacetate=1)	: Nil
Freezing point	: -37 °C (-34 °F)
Boiling point	: 107 °C (224 °F)
Flash point	: 116 °C (241 °F) [100% Ethylene Glycol] <i>ASTM D56</i>
Auto-ignition temperature	: 400 °C (752 °F) [100% Ethylene Glycol] <i>Literature</i>
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.1 @ 20 °C
Relative vapor density at 20 °C	: No data available
Specific Gravity	: 1.04
Density	: 1.04 kg/l (8.7 lbs/gal)
Solubility	: Water: Complete
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: Not applicable.
Explosive limits	: Not applicable.

9.2. Other information

VOC content : 0.00 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from any flames or sparking source. Extremely high or low temperatures.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Fume. Alcohols. Aldehydes. Ethers.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

denatonium benzoate (3734-33-6)	
LD50 oral rat	584 mg/kg (Rat)
LD50 dermal rabbit	> 2,000 mg/kg (Rabbit)
ATE US (oral)	584 mg/kg bodyweight
ethylene glycol (107-21-1)	
LD50 oral rat	> 5,000 mg/kg (Rat)
ATE US (oral)	500 mg/kg bodyweight

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diethylene glycol (111-46-6)	
LD50 oral rat	12,565 mg/kg (Rat)
LD50 dermal rabbit	11,890 mg/kg (Rabbit)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	11,890 mg/kg bodyweight
Skin corrosion/irritation	: Not classified pH: 8
Serious eye damage/irritation	: Not classified pH: 8
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

SECTION 12: Ecological information

12.1. Toxicity

denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
EC50 Daphnia 1	13 mg/l (48 h; <i>Daphnia magna</i>)
ethylene glycol (107-21-1)	
LC50 fish 1	53,000 mg/l (96 h; <i>Pimephales promelas</i> ; Static system)
EC50 Daphnia 1	> 10,000 mg/l (24 h; <i>Daphnia magna</i>)
LC50 fish 2	40,761 mg/l (96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>); Static system)
Threshold limit algae 1	> 10,000 mg/l (168 h; <i>Scenedesmus quadricauda</i>)
Threshold limit algae 2	2,000 mg/l (192 h; <i>Microcystis aeruginosa</i>)
diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000 ppm (24 h; <i>Carassius auratus</i>)
LC50 other aquatic organisms 1	1,174 mg/l (<i>Xenopus laevis</i>)
EC50 Daphnia 1	> 10,000 mg/l (24 h; <i>Daphnia magna</i>)
LC50 fish 2	61,072 ppm (168 h; <i>Poecilia reticulata</i>)
TLM fish 1	> 32,000 mg/l (96 h; <i>Gambusia affinis</i>)
TLM other aquatic organisms 1	> 1,000 ppm (96 h)
Threshold limit other aquatic organisms 1	1,174 mg/l (72 h; <i>Xenopus laevis</i> ; Toxicity test)
Threshold limit other aquatic organisms 2	10,745 mg/l (16 h; Protozoa; Toxicity test)
Threshold limit algae 1	2,700 mg/l (168 h; <i>Scenedesmus quadricauda</i>)
Threshold limit algae 2	100 mg/l (<i>Selenastrum capricornutum</i>)

12.2. Persistence and degradability

denatonium benzoate (3734-33-6)	
Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.
ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Not established.
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance

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denatonium benzoate (3734-33-6)	
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36 % ThOD
diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.51 g O ₂ /g substance
ThOD	1.51 g O ₂ /g substance
BOD (% of ThOD)	0.015 % ThOD

12.3. Bioaccumulative potential

denatonium benzoate (3734-33-6)	
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
ethylene glycol (107-21-1)	
BCF fish 1	10 (72 h; <i>Leuciscus idus</i>)
BCF other aquatic organisms 1	0.21 - 0.6 (<i>Procambarus</i> sp.; Chronic)
BCF other aquatic organisms 2	190 (24 h; Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500). Not established.
diethylene glycol (111-46-6)	
Log Pow	-1.98
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

ethylene glycol (107-21-1)	
Surface tension	0.048 N/m (20 °C / 68 °F)
diethylene glycol (111-46-6)	
Surface tension	0.0485 N/m

12.5. Other adverse effects

Effect on ozone layer	: No known effect on the ozone layer
Effect on global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.

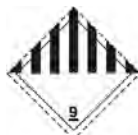
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT	
Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III
UN-No.(DOT)	: 3082
DOT NA no.	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s.
Department of Transportation (DOT) Hazard Classes	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)



DOT Symbols	: G - Identifies PSN requiring a technical name
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Peak Cool 50/50 Prediluted Antifreeze & Coolant

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Packing group (DOT)	: III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Other information	: Non Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package).

ADR

No additional information available

Transport by sea

UN-No. (IMDG) : Not regulated by IMDG (in quantities under 5,000 lbs in any one inner package)

Air transport

UN-No.(IATA) : Not regulated by IATA (in quantities under 5,000 lbs in any one inner package)

SECTION 15: Regulatory information

15.1. US Federal regulations

Peak Cool 50/50 Prediluted Antifreeze & Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
denatonium benzoate (3734-33-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb(s)
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Ethylene glycol is subject to Tier 1 and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting	Ethylene glycol is subject to Form R Reporting requirements.
diethylene glycol (111-46-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
potassium 2-ethylhexanoate (3164-85-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

Peak Cool 50/50 Prediluted Antifreeze & Coolant	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

WHMIS Classification



Class D Division 2
Subdivision A - Very
toxic material
causing other toxic
effects

Peak Cool 50/50 Prediluted Antifreeze & Coolant

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

Peak Cool 50/50 Prediluted Antifreeze & Coolant

DSL (Canada): The intentional ingredients of this product are listed
ECL (South Korea): The intentional ingredients of this product are listed.
EINECS (Europe): The intentional ingredients of this product are listed
ENCS (Japan): The intentional ingredients of this product are listed

15.3. US State regulations

ethylene glycol (107-21-1)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard

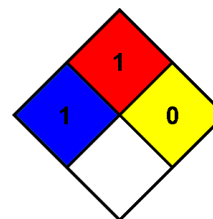
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Peak Cool 50/50 Prediluted Antifreeze & Coolant

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Peak Cool Extended Life Concentrate Antifreeze & Coolant

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : **Peak Cool Extended Life Concentrate Antifreeze & Coolant**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Automotive Engine Antifreeze & Coolant

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300; (703) 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Oral) H302
Repr. 2 H361
STOT RE 2 H373

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302 - Harmful if swallowed
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral)

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe mist, spray, vapors
P264 - Wash affected areas thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear personal protective equipment as required
P301+P310 - If swallowed: Immediately call doctor/physician or poison center
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol	(CAS No) 107-21-1	90 - 97	Acute Tox. 4 (Oral), H302
diethylene glycol	(CAS No) 111-46-6	< 5	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
water	(CAS No) 7732-18-5	< 4	Not classified
potassium 2-ethylhexanoate	(CAS No) 3164-85-0	< 3	Repr. 2, H361
denatonium benzoate	(CAS No) 3734-33-6	30 - 50 ppm	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek immediate medical advice. Allow the victim to rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
First-aid measures after skin contact	: Remove contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes). Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label).
First-aid measures after eye contact	: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. If eye irritation persists: Rinse immediately with plenty of water. Get medical advice/attention.
First-aid measures after ingestion	: Obtain emergency medical attention. Rinse mouth. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Causes damage to organs (kidneys) (oral). Suspected of damaging fertility or the unborn child.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: The lethal dose in humans is estimated to be 100 mL (3 oz). Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazaole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water fog. Fine water spray. Alcohol-resistant foam. Foam. Carbon dioxide. Dry chemical powder. Sand.
Unsuitable extinguishing media	: May spread fire. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon Dioxide.
Reactivity	: No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

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Special protective equipment for fire fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash affected areas thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -18 °C (0 °F). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethylene glycol (107-21-1)		
USA ACGIH	ACGIH Ceiling (mg/m ³)	100.00 mg/m ³
USA ACGIH	Remark (ACGIH)	Upper Respiratory Tract (URT) & Eye irritant

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Safety glasses.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

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Color	: orange
Odor	: Mild
Odor threshold	: No data available
pH 50% water solution	: 8
Relative evaporation rate (butylacetate=1)	: Nil
Freezing point	: -18 °C (0 °F)
Boiling point	: 158 °C (317 °F)
Flash point	: 116 °C (241 °F) [100% Ethylene Glycol] <i>ASTM D56</i>
Auto-ignition temperature	: 400 °C (752 °F) [100% Ethylene Glycol] <i>Literature</i>
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.1 @ 20 °C
Relative vapor density at 20 °C	: No data available
Specific Gravity	: 1.12
Density	: 1.12 g/l (9.3 lbs/gal)
Solubility	: Water: Complete
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: Not applicable.
Explosive limits	: 3.2 - 15.3 vol %

9.2. Other information

VOC content : 0.00 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from any flames or sparking source. Extremely high or low temperatures.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Fume. Alcohols. Aldehydes. Ethers.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

denatonium benzoate (3734-33-6)	
LD50 oral rat	584 mg/kg (Rat)
LD50 dermal rabbit	> 2,000 mg/kg (Rabbit)
ATE US (oral)	584 mg/kg bodyweight
ethylene glycol (107-21-1)	
LD50 oral rat	> 5,000 mg/kg (Rat)
ATE US (oral)	500 mg/kg bodyweight

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diethylene glycol (111-46-6)	
LD50 oral rat	12,565 mg/kg (Rat)
LD50 dermal rabbit	11,890 mg/kg (Rabbit)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	11,890 mg/kg bodyweight
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: The lethal dose in humans is estimated to be 100 mL (3 oz). Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
EC50 Daphnia 1	13 mg/l (48 h; <i>Daphnia magna</i>)
ethylene glycol (107-21-1)	
LC50 fish 1	53,000 mg/l (96 h; <i>Pimephales promelas</i> ; Static system)
EC50 Daphnia 1	> 10,000 mg/l (24 h; <i>Daphnia magna</i>)
LC50 fish 2	40,761 mg/l (96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>); Static system)
Threshold limit algae 1	> 10,000 mg/l (168 h; <i>Scenedesmus quadricauda</i>)
Threshold limit algae 2	2,000 mg/l (192 h; <i>Microcystis aeruginosa</i>)
diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000 ppm (24 h; <i>Carassius auratus</i>)
LC50 other aquatic organisms 1	1,174 mg/l (<i>Xenopus laevis</i>)
EC50 Daphnia 1	> 10,000 mg/l (24 h; <i>Daphnia magna</i>)
LC50 fish 2	61,072 ppm (168 h; <i>Poecilia reticulata</i>)
TLM fish 1	> 32,000 mg/l (96 h; <i>Gambusia affinis</i>)
TLM other aquatic organisms 1	> 1,000 ppm (96 h)
Threshold limit other aquatic organisms 1	1,174 mg/l (72 h; <i>Xenopus laevis</i> ; Toxicity test)
Threshold limit other aquatic organisms 2	10,745 mg/l (16 h; Protozoa; Toxicity test)
Threshold limit algae 1	2,700 mg/l (168 h; <i>Scenedesmus quadricauda</i>)
Threshold limit algae 2	100 mg/l (<i>Selenastrum capricornutum</i>)

12.2. Persistence and degradability

denatonium benzoate (3734-33-6)	
Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.
ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Not established.
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36 % ThOD

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diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.51 g O ₂ /g substance
ThOD	1.51 g O ₂ /g substance
BOD (% of ThOD)	0.015 % ThOD

12.3. Bioaccumulative potential

denatonium benzoate (3734-33-6)	
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

ethylene glycol (107-21-1)	
BCF fish 1	10 (72 h; Leuciscus idus)
BCF other aquatic organisms 1	0.21 - 0.6 (Procambarus sp.; Chronic)
BCF other aquatic organisms 2	190 (24 h; Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500). Not established.

diethylene glycol (111-46-6)	
Log Pow	-1.98
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

ethylene glycol (107-21-1)	
Surface tension	0.048 N/m (20 °C / 68 °F)

diethylene glycol (111-46-6)	
Surface tension	0.0485 N/m

12.5. Other adverse effects

Effect on ozone layer	: No known effect on the ozone layer
Effect on global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.

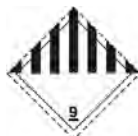
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT	
Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III
UN-No.(DOT)	: 3082
DOT NA no.	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s.
Department of Transportation (DOT) Hazard Classes	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)



DOT Symbols	: G - Identifies PSN requiring a technical name
Packing group (DOT)	: III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203

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DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Other information	: Non Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package).

ADR

No additional information available

Transport by sea

UN-No. (IMDG) : Not regulated by IMDG (in quantities under 5,000 lbs in any one inner package)

Air transport

UN-No.(IATA) : Not regulated by IATA (in quantities under 5,000 lbs in any one inner package)

SECTION 15: Regulatory information

15.1. US Federal regulations

Peak Cool Extended Life Concentrate Antifreeze & Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
denatonium benzoate (3734-33-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb(s)
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Ethylene glycol is subject to Tier 1 and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting	Ethylene glycol is subject to Form R Reporting requirements.
diethylene glycol (111-46-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
potassium 2-ethylhexanoate (3164-85-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

Peak Cool Extended Life Concentrate Antifreeze & Coolant	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

WHMIS Classification



Class D Division 2
Subdivision A - Very
toxic material
causing other toxic
effects

EU-Regulations

No additional information available

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Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

Peak Cool Extended Life Concentrate Antifreeze & Coolant

DSL (Canada): The intentional ingredients of this product are listed
ECL (South Korea): The intentional ingredients of this product are listed.
EINECS (Europe): The intentional ingredients of this product are listed
ENCS (Japan): The intentional ingredients of this product are listed

15.3. US State regulations

ethylene glycol (107-21-1)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard

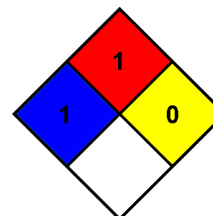
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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SAFETY DATA SHEET

NAPA DOT 3 BRAKE FLUID

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Issue Date: March 5, 2014

Revised: April 2, 2015

Product Name: NAPA DUTY DOT 3 BRAKE FLUID

Synonyms: Brake Fluid

CAS Number: Mixture, see Section 3

Chemical Formula: Mixture

General Use: Brake Fluid

Manufacturer: Warren Unilube, Inc., 915 E. Jefferson, West Memphis, AR 72301

24-HOUR EMERGENCY NUMBER – CHEMTREC: 1-800-424-9300

WARREN UNILUBE PHONE: (800) 428-9284

FAX: (870) 400-3070

Restrictions on Use:

FOR LABELS FOR THE GENERAL PUBLIC: If medical advice is needed, have product container or label at hand.

Keep out of reach of children and animals.

Read label before use.

FOR THE INDUSTRIAL WORKER: Industrial use only.

SECTION 2: HAZARD(S) IDENTIFICATION

Hazard Classification:

OSHA Hazards: Target Organ Effect, Harmful by ingestion, Irritant, Teratogen, Reproductive hazard

Target Organs: Kidney, Liver, Central nervous system, Female reproductive system, Male reproductive system, Blood.

GHS Classification:

- Acute toxicity, dermal (Category 5)
- Acute toxicity, oral (Category 4)
- Skin Irritation (Category 3)
- Serious eye damage (Category 1)
- Reproductive toxicity (Category 2)



Signal Word: WARNING

Hazard Statements:

- | | |
|------|---|
| H302 | Harmful if swallowed |
| H313 | May be harmful in contact with skin |
| H316 | Causes mild skin irritation |
| H318 | Causes serious eye damage |
| H361 | Suspected of damaging fertility or the unborn child |

Precautionary Statements:

- | | |
|--------------------|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety instructions have been read and Understood. |
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P280 | Wear eye protection / face protection. |
| P301 +P312 | IF SWALLOWED: Call a POISON CENTER or doctor / physician immediately. |
| P330 | IF SWALLOWED: Rinse mouth. |
| P312 | IF ON SKIN: Call a POISON CENTER or doctor / physician if you feel unwell. |
| P332 + P313 | If skin irritation occurs: Get medical advise / attention. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. |
| P310 | IF IN EYES: Immediately call a POISON CENTER or doctor / physician. |
| P308 + P313 | If exposed or concerned: Get medical advice / attention. |

20-80% of the mixture consists of ingredients of unknown acute toxicity.

HMIS Classification

Health hazard: 1
 Chronic Health Hazard
 Flammability 1
 Physical hazards 0

NFPA Rating

Health hazard: 1
 Fire: 1
 Reactivity 0

Description of Any Other Hazards Not Otherwise Classified: none known.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<u>INGREDIENT Name:</u>	<u>CAS NUMBER</u>	<u>%wt. or %V</u>
Triethylene Glycol Monomethyl Ether	112-35-6	5-50
Triethylene Glycol Monoethyl Ether	112-50-5	5-50
Triethylene Glycol Monobutyl Ether	143-22-6	5-50
Tetrathylene Glycol Monobutyl Ether	1559-34-8	5-20
Polyethylene Glycol	25322-68-3	5-20
Diethylene Glycol Monobutyl Ether	112-34-5	5-20
Diethylene Glycol	111-46-6	5-15
Diethylene Glycol Monomethyl Ether	111-77-3	<5
Diethylene Glycol Monoethyl Ether	111-90-0	<5
Polyalkylene Glycol Monobutyl Ether	9004-77-7	5-20
Polyalkylene Glycol Monomethyl Ether	23783-42-8	5-20
Polyalkylene Glycols	9038-95-3	5-20
Trade Secret Inhibitor Package	Trade Secret	3

3% of the composition of this material has been withheld as a trade secret.

SECTION 4: FIRST AID MEASURE

EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation continues or persists, get medical advice / attention.

SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice / attention.

INGESTION: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treatment should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak, and disperse vapors.

UNSUITABLE EXTINGUISHING MEDIA: Direct water stream.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate area. Do not use direct water stream to extinguish fires. Do not release runoff from fire control methods to sewers or waterways.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, and unidentified organic compounds.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS: Wear full protective clothing and NIOSH – approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive breathing mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use appropriate personal protective equipment. Avoid breathing vapors, mist or gas. Avoid contact with spilled material. Insure adequate ventilation. Remove all sources of ignition. Use non-sparking tools and equipment.

PROTECTIVE CLOTHING: Standard work uniform. Impervious gloves. Safety glasses. Personnel should increase PPE level as deemed appropriate in any given situation.

EMERGENCY PROCEDURES:

SMALL SPILLS: Contain and recover liquid when possible. Collect liquid in appropriate container or absorb with an inert material (such as vermiculite or dry sand) and place in chemical waste container. Do not use combustible materials such as sawdust for the cleanup.

LARGE SPILLS:

Containment: Shut off source of leak if safe to do so. Dike far ahead of liquid spill for later disposal. Do not allow material to enter sewers or waterways.

Cleanup: Contain and recover liquid when possible. Collect liquid in appropriate container. Absorb residue with an inert material (such as vermiculite or dry sand) and place in chemical waster container. Do not use combustible materials such as sawdust for the cleanup.

SECTION 7: HANDLING AND STORAGE

HANDLING PRECAUTIONS: May be harmful or fatal if swallowed.

STORAGE REQUIREMENTS: Store in a cool dry, ventilated area.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Controls should be such that adequate ventilation is provided.

VENTILATION: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work place by controlling it at its source.

RESPIRATORY PROTECTION: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA / NIOSH approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (e.g. cleaning spills, reactor vessels, or storage tanks), wear an SCBA. *Warning! Air purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

EYE PROTECTION: Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with, contact lenses.

SKIN PROTECTION: Wear chemically protective gloves, boots, aprons and gauntlets to prevent prolonged or repeated skin contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Make emergency eyewash stations, safety / quick drench showers and washing facilities available in work areas.

WORK HYGIENIC PRACTICES: Never eat, drink or smoke in work areas. Practice good personal hygiene after using this material especially before eating, drinking or smoking, using the toilet, or applying cosmetics. Separate contaminate work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Discard belts and shoes that cannot be cleaned.

EXPOSURE GUIDELINES:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		USA WEEL
	TWA	STEL	TWA	STEL	TWA	STEL	
Triethylene Glycol Monomethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

Triethylene Glycol Monoethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Triethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Tetraethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	10 mg/m3
Diethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Diethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	10 mg/m3
Diethylene Glycol Monomethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	25 ppm
Diethylene Glycol Monoethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Diethylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyalkylene Glycol Monobutyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyalkylene Glycol Monomethyl Ether	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Polyalkylene Glycols	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Inhibitor Package	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE AND COLOR: Yellow to amber

ODOR: Mild

FLASH POINT: >275°F (>135°C)

UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: not available

AUTO IGNITION TEMPERATURE: not available

DECOMPOSITION TEMPERATURE: not available

VAPOR PRESSURE: not available

ODOR THRESHOLD: not available

VAPOR DENSITY (air = 1): >1

pH: 10.0 – 11.5

RELATIVE DENSITY: 8.33 – 9.02 lb/gal

SPECIFIC GRAVITY (H₂O = 1 AT 4 C): 1.000 – 1.070

MELTING POINT / FREEZING POINT: not available

WATER SOLUBILITY: soluble

OTHER SOLUBILITIES: not available

INITIAL BOILING POINT AND BOILING RANGE: 480°F (248.9°C), boiling range not available

EVAPORATION RATE (BuAc = 1): <0.01

PARTITION COEFFICIENT: n-OCTANOL/WATER: not available

VISCOSITY: not available

REFRACTIVE INDEX: not available

FORMULA WEIGHT: mixture

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: none under normal handling.

STABILITY: stable at room temperature in closed containers under normal storage and handling conditions.

CONDITIONS TO AVOID (STABILITY): none known.

INCOMPATIBILITY (MATERIAL TO AVOID): none known.

HAZARDOUS DECOMPOSITION BY-PRODUCTS: Thermal oxidative decomposition can produce carbon monoxide, carbon dioxide and unknown organic compounds.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

CONDITIONS TO AVOID (POLYMERIZATION): Hazardous polymerization will not occur.

HAZARDOUS POLYMERICATION BY-PRODUCTS: Hazardous polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Swallowing larger amounts may cause nausea and vomiting, abdominal discomfort or diarrhea. May cause dizziness and drowsiness.

ACUTE EFFECTS:

EYE CONTACT: May cause slight eye irritation. May cause slight corneal injury.

SKIN CONTACT: Brief contact is essentially nonirritating to skin.

INHALATION: At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of the upper respiratory tract.

INGESTION: Toxic or fatal if ingested. For diethylene glycol, a component of this mixture, a lethal dose can be as little as two ounces. Symptoms of diethylene glycol poisoning include severe abdominal cramping, diarrhea, vomiting, sweating, confusion, cardiac abnormalities, neurological abnormalities, infrequent urination, intoxication or CNS depression. If left untreated, product will metabolize to cause metabolic acidosis, renal failure, hyperkalemia, hyponatremia, paralysis, cardiac failure or death. Seek medical attention immediately for poisoning. If ingested, DO NOT wait for symptoms to develop before getting treatment.

TARGET ORGAN EFFECTS: Product is toxic to kidneys, liver, central nervous system and heart. Metabolic products of diethylene glycol produce acidosis and organ toxicity effects.

CHRONIC EFFECTS: May cause dryness or defatting of the skin, dermatitis, or may aggravate existing skin conditions.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Various skin conditions.

ACUTE TOXICITY VALUES

Triethylene Glycol Monomethyl Ether

ORAL LD50 (rat): 11,842 mg/kg

DERMAL LD50 (rabbit): 7,441 mg/kg

INHALATION LC50 (state animal): data unavailable

Triethylene Glycol Monoethyl Ether

ORAL LD50 (state animal): data unavailable

DERMAL LD50 (state animal): data unavailable

INHALATION LC50 (state animal): data unavailable

Tetraethylene Glycol Monobutyl Ether

ORAL LD50 (rat): 5,300 mg/kg

DERMAL LD50 (rabbit): 3,505 mg/kg

INHALATION LC50 (state animal): data unavailable

Polyethylene Glycol

ORAL LD50 (state animal): data unavailable

DERMAL LD50 (state animal): data unavailable

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol Monobutyl Ether

ORAL LD50 (rat): 5,660 mg/kg

DERMAL LD50 (rabbit): 2,700 mg/kg

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol

ORAL LD50 (rat): 12,565 mg/kg

DERMAL LD50 (rabbit): 11,890 mg/kg

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol Monomethyl Ether

ORAL LD50 (rat): >7,000 mg/kg

DERMAL LD50 (rabbit): >20,400 mg/kg

INHALATION LC50 (state animal): data unavailable

Diethylene Glycol Monoethyl Ether

ORAL LD50 (rat): 10,502 mg/kg

DERMAL LD50 (rabbit): 9,143 mg/kg

INHALATION LC50 (state animal): data unavailable

Polyalkylene Glycol Monobutyl Ether

ORAL LD50 (rat): >2,000 mg/kg

DERMAL LD50 (rat): >2,000 mg/kg

INHALATION LC50 (state animal): data unavailable

Polyalkylene Glycol Monomethyl Ether

ORAL LD50 (state animal): data unavailable

DERMAL LD50 (state animal): data unavailable

INHALATION LC50 (state animal): data unavailable

Polyalkylene Glycols

ORAL LD50 (state animal): data unavailable

DERMAL LD50 (state animal): data unavailable

INHALATION LC50 (state animal): data unavailable

LISTED CARCINOGEN:

NATIONAL TOXICOLOGY PROGRAM REPORT ON CARCINOGENS: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC LISTED AS POTENTIAL CARCINOGEN: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA LISTED AS POTENTIAL CARCINOGEN: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

SECTION 12: ECOLOGICAL INFORMATION

DATA FROM TOXICITY TESTS ON AQUATIC AND/OR TERRESTRIAL ORGANISMS:

Triethylene Glycol Monoethyl Ether: data unavailable

Triethylene Glycol Monobutyl Ether: data unavailable

Tetraethylene Glycol Monobutyl Ether: data unavailable

Polyethylene Glycol

Fish: LC50 – Leuciscus idus (Golden orfe) <500 mg/l

Daphnia: data unavailable

Diethylene Glycol Monobutyl Ether

Fish: LC50 – Lepomis macrochirus – 1,300 mg/l – 96h

LC50 – Leuciscus idus (Golden orfe) – >1,000 mg/l – 48h

Daphnia: data unavailable

Diethylene Glycol

Fish: LC50 – Pimephales promelas (fathead minnow) – 75,200 mg/l – 96h

LC50 – Carassius auratus (goldfish) – 5,000 mg/l – 24h

Daphnia: EC50 – Daphnia magna (Water flea) - >10,000 mg/l – 24h

Diethylene Glycol Monomethyl Ether

Fish: LC50 – Lepomis macrochirus – 7,500 mg/l – 96h

Daphnia: data unavailable

Diethylene Glycol Monoethyl Ether

Fish: LC50 – Pimephales promelas (fathead minnow) – 9,650 mg/l – 96h

Daphnia: EC50 – Daphnia magna (Water flea) - >3,340 mg/l – 24h

Polyalkylene Glycol Monobutyl Ether: data unavailable

Polyalkylene Glycol Monomethyl Ether: data unavailable

Polyalkylene Glycols: data unavailable

ENVIRONMENTAL FATE: data unavailable for mixture

BIOACCUMULATION POTENTIAL: data unavailable for mixture

POTENTIAL TO MOVE FROM SOIL TO GROUNDWATER: data unavailable for mixture

OTHER ADVERS ENVIRONMENTAL EFFECTS: data unavailable for mixture

SECTION 13: DISPOSAL CONSIDERATIONS

CONTAINERS TO USE: No specific recommendations

RECOMMENDED DISPOSAL METHODS: Whatever cannot be saved for recovery or recycling should be disposed of in an approved waste facility in accordance with Federal, State/Provincial and Local requirements.

PHYSICAL AND CHEMICAL PROPERTIES THAT MAY AFFECT DISPOSAL ACTIVITIES:
No specific information available.

WHENEVER POSSIBLE, MATERIAL SHOULD NOT BE ALLOWED TO ENTER SEWAGE DISPOSAL SYSTEMS.

SPECIAL PRECAUTIONS FOR LANDFILL OR INCINERATION ACTIVITIES: No specific information available.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (49 CFR 172.101)

PROPER SHIPPING NAME: DOT 3 Brake Fluid

DOT Non-Bulk: Not Regulated

DOT Bulk: Not Regulated

IATA

Not Dangerous Goods

IMDG

Not Dangerous Goods

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): all components are listed on the TSCA Inventory

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): None. However, this product contains various ethylene glycols and glycol ethers which are each included as a broad category on the CERCLA Hazardous Substances list.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

311/312 HAZARD CATEGORIES:

Immediate Hazard: yes / no

Delayed Hazard: yes / no

Fire Hazard: yes / no

Pressure Hazard: yes / no

Reactivity Hazard: yes / no

313 REPORTABLE INGREDIENTS: The following components are subject to reporting levels established by SARA Title III, Section 313:

2-(2-Ethoxyethoxy) ethanol	CAS Number: 111-90-0
2-(2-methoxyethoxy) ethanol	CAS Number: 111-77-3
2-(2-Butoxyethoxy) ethanol	CAS Number: 112-34-5

CLEAN WATER ACT (CWA): None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

CLEAN AIR ACT (CAA): None of the chemicals in the product are listed as Hazardous Air Pollutants.

STATE REGULATIONS:

California: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts:

2-(2-Methoxyethoxy) ethanol CAS Number: 111-77-3

New Jersey:

Triethylene glycol monobutyl ether CAS Number: 143-22-6
Polyethylene glycol CAS Number: 25322-68-3
2-(2-Butoxyethoxy) ethanol CAS Number: 112-34-5
Diethylene glycol CAS Number: 111-46-6
2-(2-Methoxyethoxy) ethanol CAS Number: 111-77-3
2-(2-Ethoxyethoxy) ethanol CAS Number: 111-90-0

Pennsylvania:

Triethylene glycol monobutyl ether CAS Number: 143-22-6
Polyethylene glycol CAS Number: 25322-68-3
2-(2-Butoxyethoxy) ethanol CAS Number: 112-34-5
Diethylene glycol CAS Number: 111-46-6
2-(2-Methoxyethoxy) ethanol CAS Number: 111-77-3
2-(2-Ethoxyethoxy) ethanol CAS Number: 111-90-0

INTERNAL REGULATIONS:

Persistent Organic Pollutants (United Nations): not listed
Initial List of Prior Informed Consent Chemicals (United Nations): not listed
Ozone Depleting Substances (Montreal Protocol): not listed
Greenhouse Gases (Intergovernmental Panel on Climate Change): not listed

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES: All components are listed.

CANADA: DOMESTIC SUBSTANCES LIST: All components are listed.

CANADA WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS):
D2B - Toxic Material at >1%.

CANADIAN ENVIRONMENTAL PROTECTION AGENCY TOXICS LIST: None of the components of this mixture are listed.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES: This material contains components not listed on the EINECS Inventory: Polyalkylene glycols, CAS Number 9038-95-3.

NEW ZEALAND: All components are listed.

PHILLIPPINE INVENTORY OF CHEMICALS AND CHEMICAL SUBSTANCES: All components are listed.

SECTION 16: REGULATORY INFORMATION

Disclaimer: This product is FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH CHILDREN AND ANIMALS. DO NOT TAKE INTERNALLY.

Warren Unilube, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. No warranty of fitness for any particular purpose, warranty of merchantability, or any other warranty expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specific product designated and may not be valid where such products is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of Warren Unilube, Warren Unilube expressly disclaims any and all liability as to any results obtained or arising from any of the product or reliance on such information.

For additional product information, please contact Warren Unilube, Inc. at (800) 428-9284.

Product Name : RIDGID Dark Thread Cutting Oil

SKIN CONTACT:

Remove contaminated/saturated clothing and shoes. Wash contact areas with soap and water. If skin irritation occurs: Get medical advice/attention.

EYE CONTACT:

Flush thoroughly with water. If irritation occurs, get medical assistance. Continue to rinse for at least 15 minutes.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Symptoms:

No data available.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treatment:

Get medical attention as appropriate or if symptoms persist

Section 5 – Fire Fighting Measures

GENERAL FIRE HAZARDS:

No unusual fire or explosion hazards noted.

SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

Suitable extinguishing media:

No data available.

Unsuitable extinguishing media:

Do not use water jet as an extinguisher, as this will spread the fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Heat may cause the containers to pressurize and possibly rupture. During fire, gases hazardous to health may be formed.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special firefighting procedures:

No data available.

Special protective equipment for fire-fighters:

Firefighters must use standard protective equipment appropriate for Industrial fires.

Product Name: RIDGID Dark Thread Cutting Oil

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

See Section 8 of the SDS for Personal Protective Equipment. Do not handle damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Ensure adequate ventilation.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Absorb with sand or other inert absorbent. Stop the flow of material, if this is without risk.

ENVIRONMENTAL PRECAUTIONS:

Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so and protect against releases into the environment. Remediate as appropriate.

Section 7 – Handling And Storage

PRECAUTIONS FOR SAFE HANDLING:

Observe good industrial hygiene practices. Wear appropriate personal protective equipment. Do not expose to intense heat as product may expand and pressurize container. End-users should follow industry best practices for handling and using this product. Guidance may be found using the current version of ASTM Standard E1497-05: Standard Practice for Selection and Safe Use of Water-Miscible and Straight Oil Metal Removal Fluids

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store in original tightly closed container. Avoid contact with oxidizing agents. Store away from incompatible materials.

SHELF LIFE:

720 days

Product Name : RIDGID Dark Thread Cutting Oil

Section 8 – Exposure Controls / Personal Protection

EXPOSURE LIMITS:

Chemical name	type	Exposure Limit Values	Source
Mineral oil - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Mineral oil - Mist.	STEL	10 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PROTECTIVE MEASURES:

Use personal protective equipment as required.

RESPIRATORY PROTECTION:

In case of inadequate ventilation use suitable respirator. Seek advice from supervisor on the company's respiratory protection standards.

EYE PROTECTION:

Wear safety glasses with side shields (or goggles).

SKIN AND BODY PROTECTION:

Wear protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

HYGIENE MEASURES:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. Discard contaminated footwear that cannot be cleaned. Avoid contact with skin, eyes, and clothing.

Product Name : RIDGID Dark Thread Cutting Oil

Section 9 – Physical And Chemical Properties

Appearance	
Physical State	Liquid
Form	No data available
Color	Black
Odor	Mild petroleum
Odor Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	196 °C (385 °F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit – upper (%)	No data available
Explosive limit – lower (%)	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	0.878
Solubility(ies)	
Solubility in water	Insoluble
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	42.5 mm ² /s (40 °C, measured)
VOC	2 g/l

Product Name : RIDGID Dark Thread Cutting Oil

Section 10 – Stability And Reactivity

REACTIVITY:

Not reactive during normal use.

CHEMICAL STABILITY:

No data available.

POSSIBILITY OF HAZARDOUS REACTIONS:

None under normal conditions.

CONDITIONS TO AVOID:

Avoid heat or contamination.

INCOMPATIBLE MATERIALS:

No data available.

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

Section 11 – Toxicological Information

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Ingestion:

May be ingested by accident. Ingestion may cause irritation and malaise.

Inhalation:

Inhalation is the primary route of exposure. In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.

Skin Contact:

Prolonged skin contact may cause redness and irritation.

Eye contact:

Eye contact is possible and should be avoided.

Product Name : RIDGID Dark Thread Cutting Oil

INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity

Oral Product:

ATEmix (): 2000 - 5000 mg/kg

Dermal Product:

ATEmix (): 2000 - 5000 mg/kg

Inhalation Product:

ATEmix (, 4h): > 5000 mg/l dusts, mists and fumes

Repeated dose toxicity Product:

No data available.

Skin Corrosion/Irritation Product:

No data available.

Serious Eye Damage/Eye Irritation Product:

No data available.

Respiratory or Skin Sensitization Product:

No data available.

Carcinogenicity Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro Product:

No data available.

In vivo Product:

No data available.

Reproductive toxicity Product:

No data available.

Specific Target Organ Toxicity - Single Exposure Product:

No data available.

Specific Target Organ Toxicity - Repeated Exposure Product:

No data available.

Aspiration Hazard Product:

No data available.

Other effects:

No data available

Product Name : RIDGID Dark Thread Cutting Oil

Section 12 – Ecological Information

GENERAL INFORMATION:

This product has not been evaluated for ecological toxicity or other environmental effects.

Section 13 – Disposal Consideration

DISPOSAL INSTRUCTIONS:

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. It is the responsibility of the product user or owner to determine at the time of disposal, which waste regulations must be applied.

CONTAMINATED PACKAGING:

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 – Transportation Information

This material is not subject to transport regulations.

Section 15 – Regulatory Information

US FEDERAL REGULATIONS

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories - None
SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

US STATE REGULATIONS

US. California Proposition 65
No component is regulated by CA Prop 65.

Product Name: RIDGID Dark Thread Cutting Oil

Section 16 – Other Information

Prepared by: Ridge Tool Company

Issue Date: May 29, 2015

Last Revision Date: May 29, 2015

RIDGE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

Product Name : RIDGID Endura-Clear Thread Cutting Oil

Section 4 – First Aid Measures

INGESTION:

Rinse mouth thoroughly. Call a Poison Center or doctor if you feel unwell. Do NOT induce vomiting.

INHALATION:

Move to fresh air. Call a Poison Center or doctor if you feel unwell.

SKIN CONTACT:

Remove contaminated/saturated clothing and shoes. Wash contact areas with soap and water. If skin irritation occurs: Get medical advice/attention.

EYE CONTACT:

Flush thoroughly with water. If irritation occurs, get medical assistance. Continue to rinse for at least 15 minutes.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Symptoms:

No data available.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treatment:

Get medical attention as appropriate or if symptoms persist

Section 5 – Fire Fighting Measures

GENERAL FIRE HAZARDS:

No unusual fire or explosion hazards noted.

SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

Suitable extinguishing media:

No data available.

Unsuitable extinguishing media:

Do not use water jet as an extinguisher, as this will spread the fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Heat may cause the containers to pressurize and possibly rupture. During fire, gases hazardous to health may be formed.

Product Name : RIDGID Endura-Clear Thread Cutting Oil

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special firefighting procedures:

No data available.

Special protective equipment for fire-fighters:

Firefighters must use standard protective equipment appropriate for Industrial fires.

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

See Section 8 of the SDS for Personal Protective Equipment. Do not handle damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Ensure adequate ventilation.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Absorb with sand or other inert absorbent. Stop the flow of material, if this is without risk.

ENVIRONMENTAL PRECAUTIONS:

Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so and protect against releases into the environment. Remediate as appropriate.

Section 7 – Handling And Storage

PRECAUTIONS FOR SAFE HANDLING:

Observe good industrial hygiene practices. Wear appropriate personal protective equipment. Do not expose to intense heat as product may expand and pressurize container.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store in original tightly closed container. Avoid contact with oxidizing agents. Store away from incompatible materials.

SHELF LIFE:

720 days

Product Name : RIDGID Endura-Clear Thread Cutting Oil

Section 8 – Exposure Controls / Personal Protection

EXPOSURE LIMITS:

Chemical name	type	Exposure Limit Values	Source
Mineral oil - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

PROTECTIVE MEASURES:

Use personal protective equipment as required.

RESPIRATORY PROTECTION:

In case of inadequate ventilation use suitable respirator. Seek advice from supervisor on the company's respiratory protection standards.

EYE PROTECTION:

Wear safety glasses with side shields (or goggles).

SKIN AND BODY PROTECTION:

Wear protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

HYGIENE MEASURES:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. Discard contaminated footwear that cannot be cleaned. Avoid contact with skin, eyes, and clothing.

Product Name : RIDGID Endura-Clear Thread Cutting Oil

Section 9 – Physical And Chemical Properties

Appearance	
Physical State	Liquid
Form	No data available
Color	Amber
Odor	Mild petroleum
Odor Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	177 °C (351 °F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit – upper (%)	No data available
Explosive limit – lower (%)	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	0.9297
Solubility(ies)	
Solubility in water	Insoluble
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	44.5 mm ² /s (40 °C, measured)
VOC	1.1 g/l

Product Name : RIDGID Endura-Clear Thread Cutting Oil

Section 10 – Stability And Reactivity

REACTIVITY:

Not reactive during normal use.

CHEMICAL STABILITY:

No data available.

POSSIBILITY OF HAZARDOUS REACTIONS:

None under normal conditions.

CONDITIONS TO AVOID:

Avoid heat or contamination.

INCOMPATIBLE MATERIALS:

No data available.

HAZARDOUS DECOMPOSITION PRODUCTS:

Contains a component which may release flammable substances, including trimethylpentene, by distillation in systems with solvent recovery. This may lead to accumulation in the solvent circuit.

Section 11 – Toxicological Information

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Ingestion:

May be ingested by accident. Ingestion may cause irritation and malaise.

Inhalation:

Inhalation is the primary route of exposure. In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.

Skin Contact:

Prolonged skin contact may cause redness and irritation.

Eye contact:

Eye contact is possible and should be avoided.

Product Name : RIDGID Endura-Clear Thread Cutting Oil

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS

Ingestion:

No data available.

Inhalation:

No data available.

Skin Contact:

No data available.

Eye contact:

No data available.

INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity

Oral Product:

ATEmix (): 2000 - 5000 mg/kg

Dermal Product:

ATEmix (): 2000 - 5000 mg/kg

Inhalation Product:

Not classified for acute toxicity based on available data.

Repeated dose toxicity Product:

No data available.

Skin Corrosion/Irritation Product:

No data available.

Serious Eye Damage/Eye Irritation Product:

No data available.

Respiratory or Skin Sensitization Product:

No data available.

Carcinogenicity Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro Product:

No data available.

In vivo Product:

No data available.

Product Name : RIDGID Endura-Clear Thread Cutting Oil

Reproductive toxicity Product:

No data available.

Specific Target Organ Toxicity - Single Exposure Product:

No data available.

Specific Target Organ Toxicity - Repeated Exposure Product:

No data available.

Aspiration Hazard Product:

No data available.

Other effects:

No data available

Section 12 – Ecological Information

GENERAL INFORMATION:

This product has not been evaluated for ecological toxicity or other environmental effects.

Section 13 – Disposal Consideration

DISPOSAL INSTRUCTIONS:

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. It is the responsibility of the product user or owner to determine at the time of disposal, which waste regulations must be applied.

CONTAMINATED PACKAGING:

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 – Transportation Information

This material is not subject to transport regulations.

Product Name : RIDGID Endura-Clear Thread Cutting Oil

Section 15 – Regulatory Information

US FEDERAL REGULATIONS

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories - None

SARA 313 (TRI Reporting)

Chemical Identity	Reported threshold for other users	Reported threshold for other users
zinc compound	10000 lbs	25000 lbs

US STATE REGULATIONS

US. California Proposition 65

No component is regulated by CA Prop 65.

Section 16 – Other Information

Prepared by: Ridge Tool Company

Issue Date: June 23, 2015

Last Revision Date: June 23, 2015

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Product Name : RIDGID Extreme Performance Thread Cutting Oil

Section 4 – First Aid Measures

INGESTION:

Rinse mouth thoroughly. Call a Poison Center or doctor if you feel unwell. Do NOT induce vomiting.

INHALATION:

Move to fresh air. Call a Poison Center or doctor if you feel unwell.

SKIN CONTACT:

Remove contaminated/saturated clothing and shoes. Wash contact areas with soap and water. If skin irritation occurs: Get medical advice/attention.

EYE CONTACT:

Flush thoroughly with water. If irritation occurs, get medical assistance. Continue to rinse for at least 15 minutes.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Symptoms:

No data available.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treatment:

Get medical attention as appropriate or if symptoms persist

Section 5 – Fire Fighting Measures

GENERAL FIRE HAZARDS:

No unusual fire or explosion hazards noted.

SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

Suitable extinguishing media:

No data available.

Unsuitable extinguishing media:

Do not use water jet as an extinguisher, as this will spread the fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Heat may cause the containers to pressurize and possibly rupture. During fire, gases hazardous to health may be formed.

Product Name : RIDGID Extreme Performance Thread Cutting Oil

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special firefighting procedures:

No data available.

Special protective equipment for fire-fighters:

Firefighters must use standard protective equipment appropriate for Industrial fires.

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

See Section 8 of the SDS for Personal Protective Equipment. Do not handle damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Ensure adequate ventilation.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Absorb with sand or other inert absorbent. Stop the flow of material, if this is without risk.

ENVIRONMENTAL PRECAUTIONS:

Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so and protect against releases into the environment. Remediate as appropriate.

Section 7 – Handling And Storage

PRECAUTIONS FOR SAFE HANDLING:

Observe good industrial hygiene practices. Wear appropriate personal protective equipment. Do not expose to intense heat as product may expand and pressurize container.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store in original tightly closed container. Avoid contact with oxidizing agents. Store away from incompatible materials.

SHELF LIFE:

720 days

Product Name : RIDGID Extreme Performance Thread Cutting Oil

Section 8 – Exposure Controls / Personal Protection

EXPOSURE LIMITS:

Chemical name	type	Exposure Limit Values	Source
Mineral oil - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Mineral oil - Mist.	STEL	10 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

PROTECTIVE MEASURES:

Use personal protective equipment as required.

RESPIRATORY PROTECTION:

In case of inadequate ventilation use suitable respirator. Seek advice from supervisor on the company's respiratory protection standards.

EYE PROTECTION:

Wear safety glasses with side shields (or goggles).

SKIN AND BODY PROTECTION:

Wear protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

HYGIENE MEASURES:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. Discard contaminated footwear that cannot be cleaned. Avoid contact with skin, eyes, and clothing.

Product Name : RIDGID Extreme Performance Thread Cutting Oil

Section 9 – Physical And Chemical Properties

Appearance	
Physical State	Liquid
Form	No data available
Color	Amber
Odor	Mild petroleum
Odor Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	196 °C (385 °F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit – upper (%)	No data available
Explosive limit – lower (%)	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	0.88
Solubility(ies)	
Solubility in water	Insoluble
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	38 mm ² /s (40 °C, measured)
VOC	6.1 g/l

Product Name : RIDGID Extreme Performance Thread Cutting Oil

Section 10 – Stability And Reactivity

REACTIVITY:

Not reactive during normal use.

CHEMICAL STABILITY:

No data available.

POSSIBILITY OF HAZARDOUS REACTIONS:

None under normal conditions.

CONDITIONS TO AVOID:

Avoid heat or contamination.

INCOMPATIBLE MATERIALS:

No data available.

HAZARDOUS DECOMPOSITION PRODUCTS:

Contains a component which may release flammable substances, including trimethylpentene, by distillation in systems with solvent recovery. This may lead to accumulation in the solvent circuit.

Section 11 – Toxicological Information

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Ingestion:

May be ingested by accident. Ingestion may cause irritation and malaise.

Inhalation:

Inhalation is the primary route of exposure. In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.

Skin Contact:

Prolonged skin contact may cause redness and irritation.

Eye contact:

Eye contact is possible and should be avoided.

Product Name : RIDGID Extreme Performance Thread Cutting Oil

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS

Ingestion:

No data available.

Inhalation:

No data available.

Skin Contact:

No data available.

Eye contact:

No data available.

INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity

Oral Product:

ATEmix (): 2000 - 5000 mg/kg

Dermal Product:

ATEmix (): 2000 - 5000 mg/kg

Inhalation Product:

Not classified for acute toxicity based on available data.

Repeated dose toxicity Product:

No data available.

Skin Corrosion/Irritation Product:

No data available.

Serious Eye Damage/Eye Irritation Product:

No data available.

Respiratory or Skin Sensitization Product:

No data available.

Carcinogenicity Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro Product:

No data available.

In vivo Product:

No data available.

Reproductive toxicity Product:

No data available.

Product Name : RIDGID Extreme Performance Thread Cutting Oil

Specific Target Organ Toxicity - Single Exposure Product:

No data available.

Specific Target Organ Toxicity - Repeated Exposure Product:

No data available.

Aspiration Hazard Product:

No data available.

Other effects:

No data available

Section 12 – Ecological Information

GENERAL INFORMATION:

This product has not been evaluated for ecological toxicity or other environmental effects.

Section 13 – Disposal Consideration

DISPOSAL INSTRUCTIONS:

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. It is the responsibility of the product user or owner to determine at the time of disposal, which waste regulations must be applied.

CONTAMINATED PACKAGING:

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 – Transportation Information

This material is not subject to transport regulations.

Product Name : RIDGID Extreme Performance Thread Cutting Oil

Section 15 – Regulatory Information

US FEDERAL REGULATIONS

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories – None

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Zinc compound	10000 lbs	25000 lbs.

US STATE REGULATIONS

US. California Proposition 65

No component is regulated by CA Prop 65.

Section 16 – Other Information

Prepared by: Ridge Tool Company

Issue Date: June 18, 2015

Last Revision Date: June 18, 2015

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SAFETY DATA SHEET



Fuels, diesel

Section 1. Identification

GHS product identifier Fuels, diesel
Other means of identification Distillate Marine Fuels
DMA, DMALS, DMAXX, DMALSXX
DMB, DMBLS, DMBXX, DMBLSXX
DMZ, DMZLS, DMZXX, DMZLSXX
F-76
Product type Liquid.
Product code SMI2110.
SDS # SMI2110.

Relevant identified uses of the substance or mixture and uses advised against

Product use Fuel for marine engines.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Supplier BP Marine Singapore Pte Ltd
1 Harbour Front Avenue
#02-01 Keppel Bay Tower
Singapore 098632

EMERGENCY TELEPHONE NUMBER +65 63718999 (24 hours)

E-mail address MSDSadvice@bp.com

Section 2. Hazards identification

Classification of the substance or mixture ACUTE TOXICITY: INHALATION - Category 4
SKIN CORROSION/IRRITATION - Category 2
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
AQUATIC TOXICITY (CHRONIC) - Category 2

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Combustible liquid.
Harmful if inhaled.
Causes skin irritation.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves/clothing and eye/face protection.

Product name Fuels, diesel

Product code SMI2110.

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Format Singapore

Language ENGLISH

(Singapore)

(ENGLISH)

Section 2. Hazards identification

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Storage

If skin irritation occurs, seek medical advice/attention.

Disposal

Not applicable.

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification

Note: High Pressure Applications

Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.

See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

This material may contain significant quantities of polycyclic aromatic hydrocarbons (PCAs), some of which have been shown by experimental studies to induce skin cancer.

Section 3. Composition/information on ingredients

Substance/mixture

Substance

May contain 2% Sulphur or Sulfur (Maximum)

Ingredient name	%	CAS number
Fuels, diesel	100	68334-30-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Inhalation

If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Product name Fuels, diesel

Product code SMI2110.

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Version 2 Date of issue 06/27/2011.

Format Singapore

Language ENGLISH

(Singapore)

(ENGLISH)

Section 4. First aid measures

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Note: High Pressure Applications

Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis.

Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Specific treatments

No specific treatment.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use foam or all-purpose dry chemical to extinguish.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Vapors can form explosive mixtures with air. Vapors are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products

Combustion products may include the following:
carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide)
sulfur oxides (SO₂, SO₃ etc.)
other hazardous substances.

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilled material and runoff with soil and surface waterways. Aspiration hazard Can enter lungs and cause damage. Never siphon by mouth. Take precautionary measures against static discharge.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapor mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurized fuel pipes, the vapor or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

This product does not have any assigned OELs.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Product name Fuels, diesel

Product code SMI2110.

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Version 2 **Date of issue** 06/27/2011.

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(Singapore)

(ENGLISH)

Section 8. Exposure controls/personal protection

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves. Recommended: Nitrile gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Skin protection

Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Wear suitable protective clothing. Footwear highly resistant to chemicals. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static. When there is a risk of ignition wear inherently fire resistant protective clothes and gloves. Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes. When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use with adequate ventilation.

In case of insufficient ventilation, wear suitable respiratory equipment.

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application.

Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Recommended: Gas filter suitable for gases and vapors. Filter type: A
Combined filter suitable for gases, vapors and particles (dust, smoke, mist, aerosol). Filter type: AP

Section 9. Physical and chemical properties

Appearance

Physical state

Liquid.

Color

Amber./ Dark Brown.

Odor

Gas oil

Odor threshold

Not available.

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Section 9. Physical and chemical properties

pH	Not available.
Melting point	Not available.
Boiling point	150 to 385°C (302 to 725°F)
Flash point	Closed cup: >60°C (>140°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Physical state - Liquid.
Lower and upper explosive (flammable) limits	Lower: 0.6% Upper: 6.5%
Vapor pressure	<0.04 kPa (<0.301 mm Hg) at 20°C
Vapor density	>2 [Air = 1]
Relative density	Not available.
Density	<900 kg/m ³ (<0.9 g/cm ³) at 15°C
Solubility	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	250°C (482°F)
Decomposition temperature	Not available.
Viscosity	Kinematic: 2 to 11 mm ² /s (2 to 11 cSt) at 40°C

Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result/Route	Test detail	Species	Dose	Exposure	Remarks
Fuels, diesel	LD50 Dermal	Equivalent to OECD 434	Rabbit	>4300 mg/kg	-	Based on No. 2 Heating Oil.
	LD50 Dermal	Equivalent to OECD 434	Rabbit	>4300 mg/kg	-	Based on Diesel fuel
	LD50 Oral	Equivalent to OECD	Rat	17900 mg/kg	-	Based on No. 2

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Section 11. Toxicological information

		401				Heating Oil. Based on Diesel fuel
LD50 Oral	Equivalent to OECD	420	Rat	7600 mg/kg	-	
LC50 Inhalation Vapor	Equivalent to OECD	403	Rat	4.1 mg/l	4 hours	Based on Diesel fuel

Irritation/Corrosion

Product/ingredient name	Test authority / Test number	Species	Route/Result	Conc.	Remarks	
Fuels, diesel	Equivalent to OECD	404	Rabbit	Skin - Irritation	-	Based on No. 2 Heating Oil.
	Equivalent to OECD	404	Rabbit	Skin - Irritation	-	Based on Diesel fuel
	Equivalent to OECD	405	Rabbit	Eyes - Non-irritating to the eyes.	-	Based on No. 2 Heating Oil.
	Equivalent to OECD	405	Rabbit	Eyes - Non-irritating to the eyes.	-	Based on Diesel fuel

Sensitization

Product/ingredient name	Route of exposure	Test detail	Species	Result	Remarks	
Fuels, diesel	skin	Equivalent to OECD	406	Not sensitizing	Guinea pig	Based on No. 2 Heating Oil.
	skin	Equivalent to OECD	406	Not sensitizing	Guinea pig	Based on Diesel fuel

Mutagenicity

Product/ingredient name	Test detail	Cell / Type	Result	Remarks
Fuels, diesel	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive	Based on Diesel fuel
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative	Based on Heating Oil.
	not guideline	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative	Based on Heating Oil.

Conclusion/Summary

Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Test detail	Species	Route	Exposure	Result	Remarks
Fuels, diesel	Equivalent to OECD	451	Mouse	Dermal	2 years	Positive - Dermal - Unspecified Based on Heating Oil.

Conclusion/Summary

Suspected of causing cancer.

Reproductive toxicity

Product/ingredient name	Test detail	Species	Exposure	Developmental toxicity	Maternal toxicity	Fertility	Remarks

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Section 11. Toxicological information

Fuels, diesel	Equivalent 414 to OECD	Rat	Dermal	20 days	Negative	-	-	Effects observed at maternally toxic doses. (Based on Condensates (petroleum), vacuum tower)
	Equivalent 414 to OECD	Rat	Dermal	10 days	Negative	-	-	Effects observed at maternally toxic doses. (Based on Diesel fuel)
	Equivalent 414 to OECD	Rat	Dermal	10 days	Negative	-	-	Effects observed at maternally toxic doses. (Based on No. 2 Heating Oil.)

Conclusion/Summary

Development: Not classified. Based on available data, the classification criteria are not met.

Fertility: Not classified. Based on available data, the classification criteria are not met.

Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Fuels, diesel	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Fuels, diesel	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact

Causes serious eye irritation.

Inhalation

Harmful if inhaled.

Skin contact

Causes skin irritation.

Ingestion

Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

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Section 11. Toxicological information

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	Adverse symptoms may include the following: nausea or vomiting

Potential chronic health effects

General	May cause damage to organs through prolonged or repeated exposure. Vapor, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.
Carcinogenicity	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	16333.3 mg/kg

Section 12. Ecological information

Toxicity

Environmental effects	This material is toxic to aquatic life with long lasting effects.
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Persistence/degradability

IOPC Persistent/not persistent. oil: Persistent

Product/ingredient name

Bioaccumulative potential

Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Product/ingredient name	LogP_{ow}	BCF	Potential
Not available.	-	-	-

Mobility in soil

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Section 12. Ecological information

Soil/water partition coefficient (K_{oc})

Not available.

Mobility

Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

Other ecological information



Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	IMDG	IATA
UN number	UN 1202	UN 1202
UN proper shipping name	Diesel Fuel. Marine pollutant (Fuels, diesel)	Diesel Fuel
Transport hazard class(es)	3 	3 
Packing group	III	III
Environmental hazards	Yes.	Yes.
Special precautions for user	Not available.	Not available.
Additional information	<p>Emergency schedules (EmS) F-E, S-E</p> <p>Remarks Marine pollutant</p>	<p>Remarks Environmentally hazardous substance mark.</p>

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Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

No known specific national and/or regional regulations applicable to this product (including its ingredients).

Regulation according to other foreign laws

REACH Status

The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

United States inventory (TSCA 8b)

All components are listed or exempted.

Australia inventory (AICS)

All components are listed or exempted.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

All components are listed or exempted.

Japan inventory (ENCS)

All components are listed or exempted.

Korea inventory (KECI)

All components are listed or exempted.

Philippines inventory (PICCS)

All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision 2011 June 27

Date of previous issue 2011 June 27

Version 2

Prepared by Product Stewardship

Key to abbreviations

ACGIH = American Conference of Industrial Hygienists

CAS Number = Chemical Abstracts Service Registry Number

GHS = Global Harmonized System

IATA = International Air Transport Association, the organization

IMDG = International Maritime Organization Rules, rules governing shipment of goods by water.

OEL = Occupational Exposure Limit

SDS = Safety Data Sheet

STEL = Short term exposure limit

TWA = Time weighted average

UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

✔ Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

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SAFETY DATA SHEET

Gasoline Stabilizer

Date : 08/15/2014
Version : 5.1

Section 1. Identification

GHS product identifier : Gasoline Stabilizer
Code : AST
Product type : Liquid.

Identified uses

Fuel stabilizer additive.

Supplier's details : AMSOIL INC.
One AMSOIL Center
Superior, WI 54880
715-392-7101

Emergency telephone number (with hours of operation) : CHEMTREC: Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-741-5970 (collect calls accepted) (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
ASPIRATION HAZARD - Category 1
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms



Signal word : Danger

Hazard statements : Combustible liquid.
May be fatal if swallowed and enters airways.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from flames and hot surfaces. - No smoking. Avoid release to the environment.

Response : IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
Product code : AST

United States

Ingredient name	%	CAS number
Base Oil(s)*	60 - 100	See below
2,6-Di-tert-butylphenol	1 - 5	128-39-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

*Base Oil(s): 64742-88-7, 64742-47-8, 64742-46-7

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.
Unsuitable extinguishing media : Do not use water jet or water-based fire extinguishers.

Specific hazards arising from the chemical : Combustible liquid. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

-
- Special protective actions for fire-fighters** : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Under conditions which may generate mists, the following exposure limits are recommended:
ACGIH TLV TWA: 5 mg/m³ ; STEL: 10 mg/m³.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Amber.
Odor	: Aromatic hydrocarbon.
Odor threshold	: Not available.
pH	: Not available.
Melting point / Pour point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: 62°C (143.6°F) [Pensky-Martens.]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 0.8151
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic: 0.017 cm ² /s (1.7 cSt) (40°C)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,6-Di-tert-butylphenol	LD50 Dermal LD50 Oral	Rabbit Rat	>10 g/kg 1320 mg/kg	- -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,6-Di-tert-butylphenol	Skin - Moderate irritant	Rat	-	0.5 mL	-

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Distillates, hydrotreated light	-	-	-	A3	-	-

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

Name	Result
Solvent naphtha, medium aliph. Distillates, hydrotreated light Distillates, hydrotreated middle	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

There is no data available.

Section 12. Ecological information**Toxicity**

Product/ingredient name	Result	Species	Exposure
Distillates, hydrotreated light	Acute LC50 2200 µg/l Fresh water	Fish - Lepomis macrochirus	4 days

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2,6-Di-tert-butylphenol	4.5	-	high

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	Not regulated.	Not regulated.
UN proper shipping name	COMBUSTIBLE LIQUID, N.O.S. (Solvent naphtha, medium aliph., Distillates, hydrotreated light)	-	-
Transport hazard class(es)	3	-	-
Packing group	III	-	-
Environmental hazards	No.	No.	No.
Additional information	Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials, unless transported by vessel. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes.	-	-

AERG : 128

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 307: Naphthalene
Clean Water Act (CWA) 311: Naphthalene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
 Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Solvent naphtha, medium aliph. 2,6-Di-tert-butylphenol	60 - 100 1 - 5	Yes. No.	No. No.	No. No.	No. Yes.	No. No.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Naphthalene	Yes.	No.	Yes.	No.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

Section 16. Other information

History

Date of issue mm/dd/yyyy : 08/15/2014
Date of previous issue : 06/15/2014
Version : 5.1
Prepared by : AMSOIL INC.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET



Section 1. Identification

Product name	BP Unleaded Gasolines
SDS #	12631
Code	12631
Relevant identified uses of the substance or mixture and uses advised against	
Product use	USE AS MOTOR FUEL ONLY.
Supplier	BP Products North America Inc. 150 West Warrenville Road Naperville, Illinois 60563-8460 USA
EMERGENCY HEALTH INFORMATION:	1 (800) 447-8735 Outside the US: +1 703-527-3887 (CHEMTREC)
EMERGENCY SPILL INFORMATION:	1 (800) 424-9300 CHEMTREC (USA)
OTHER PRODUCT INFORMATION	1 (866) 4 BP - MSDS (866-427-6737 Toll Free - North America) email: bpcares@bp.com

Section 2. Hazards identification

OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	FLAMMABLE LIQUIDS - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Extremely flammable liquid and vapor.
Causes serious eye irritation.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging the unborn child.
May be fatal if swallowed and enters airways.
May cause drowsiness and dizziness.

Precautionary statements

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Section 2. Hazards identification

Prevention

Obtain special instructions before use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Avoid breathing vapor.
Wash thoroughly after handling.
Avoid release to the environment.

Response

IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

Store in well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified

Contains Benzene. Prolonged or repeated exposure to benzene can cause anaemia and other blood diseases, including leukemia. See toxicological information (Section 11).

Section 3. Composition/information on ingredients

Substance/mixture

Mixture

Ingredient name	CAS number	%
Gasoline	Mixture	90 - 100
Ethanol	64-17-5	0 - 10
Contains:		
Benzene	71-43-2	0 - 3
Cyclohexane	110-82-7	0 - 1
Ethylbenzene	100-41-4	0 - 2
Toluene	108-88-3	4 - 11
1,2,4-Trimethylbenzene	95-63-6	0 - 3
xylene	1330-20-7	4 - 11
Naphthalene	91-20-3	0 - 0.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Inhalation

If inhaled, remove to fresh air. Get medical attention.

If exposure to vapor, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

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Section 4. First aid measures

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Specific treatments No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray. This substance will float and can be reignited on surface water.

Unsuitable extinguishing media Do not use water jet. Never use water.

Specific hazards arising from the chemical

Flammable liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous combustion products Combustion products may include the following:
carbon dioxide
carbon monoxide
other hazardous substances.

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Special remarks on fire hazards

Do not use water jet.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources. Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained positive pressure breathing apparatus (SCBA).

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Section 6. Accidental release measures

For emergency responders Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions Liquid leaks generate large volumes of flammable vapor, heavier than air, which may travel to remote sources of ignition (eg. along drainage systems). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid exposure during pregnancy. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth.

To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Advice on general occupational hygiene Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 7. Handling and storage

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapor mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurized fuel pipes, the vapor or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapor concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume.

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks).

Section 8. Exposure controls/personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Ingredient name	Exposure limits
Gasoline	ACGIH TLV (United States). TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m ³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m ³ 15 minutes. Issued/Revised: 5/1996
Ethanol	ACGIH TLV (United States). STEL: 1000 ppm 15 minutes. Issued/Revised: 11/2008 OSHA PEL (United States). TWA: 1900 mg/m ³ 8 hours. Issued/Revised: 6/1993 TWA: 1000 ppm 8 hours. Issued/Revised: 6/1993
Benzene	ACGIH TLV (United States). Absorbed through skin. STEL: 8 mg/m ³ 15 minutes. Issued/Revised: 5/1997 STEL: 2.5 ppm 15 minutes. Issued/Revised:

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	<p>5/1997 TWA: 1.6 mg/m³ 8 hours. Issued/Revised: 5/1997 TWA: 0.5 ppm 8 hours. Issued/Revised: 5/1997 OSHA PEL (United States). STEL: 5 ppm 15 minutes. Issued/Revised: 6/1993 TWA: 1 ppm 8 hours. Issued/Revised: 6/1993 OSHA PEL Z2 (United States). AMP: 50 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 25 ppm Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993</p>
xylene	<p>ACGIH TLV (United States). STEL: 651 mg/m³ 15 minutes. Issued/Revised: 5/1996 STEL: 150 ppm 15 minutes. Issued/Revised: 5/1996 TWA: 434 mg/m³ 8 hours. Issued/Revised: 5/1996 TWA: 100 ppm 8 hours. Issued/Revised: 5/1996 OSHA PEL (United States). TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993</p>
toluene	<p>OSHA PEL Z2 (United States). AMP: 500 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 300 ppm Issued/Revised: 6/1993 TWA: 200 ppm 8 hours. Issued/Revised: 6/1993 ACGIH TLV (United States). TWA: 20 ppm 8 hours. Issued/Revised: 11/2006</p>
1,2,4-Trimethylbenzene	<p>ACGIH TLV (United States). TWA: 123 mg/m³ 8 hours. Issued/Revised: 9/1994 TWA: 25 ppm 8 hours. Issued/Revised: 9/1994</p>
ethylbenzene	<p>ACGIH TLV (United States). TWA: 20 ppm 8 hours. Issued/Revised: 12/2010 OSHA PEL (United States). TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993</p>
cyclohexane	<p>ACGIH TLV (United States). TWA: 100 ppm 8 hours. Issued/Revised: 1/2002 OSHA PEL (United States). TWA: 1050 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 300 ppm 8 hours. Issued/Revised: 6/1993</p>
naphthalene	ACGIH TLV (United States). Absorbed

Section 8. Exposure controls/personal protection

through skin.

TWA: 52 mg/m³ 8 hours. Issued/Revised: 5/1996

TWA: 10 ppm 8 hours. Issued/Revised: 5/1996

OSHA PEL (United States).

TWA: 50 mg/m³ 8 hours. Issued/Revised: 6/1993

TWA: 10 ppm 8 hours. Issued/Revised: 6/1993

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves. Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals. Nitrile gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Body protection

Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Wear suitable protective clothing. Footwear highly resistant to chemicals. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static. When there is a risk of ignition wear inherently fire resistant protective clothes and gloves. Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal

Section 8. Exposure controls/personal protection

clothes. When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use only with adequate ventilation. Do not breathe vapor or mist. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.

If operating conditions cause high vapor concentrations or the TLV is exceeded, use NIOSH-certified, supplied-air respirator.

Use with adequate ventilation.

In case of insufficient ventilation, wear suitable respiratory equipment.

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Clear
Odor	Hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	26.67 to 221°C (80 to 430°F)
Flash point	Closed cup: -42.778°C (-45°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Lower: 1.3% Upper: 7.6% (Estimated.)
Vapor pressure	48.134 to 103.146 kPa (361.97 to 775.66 mm Hg)
Vapor density	3 to 4 [Air = 1]
Density	750 kg/m ³ (0.75 g/cm ³)
Solubility	Very slightly soluble in water
Solubility	Very slightly soluble in the following materials: cold water.
Partition coefficient: n-octanol/water	>3
Auto-ignition temperature	257°C (494.6°F)
Decomposition temperature	Not available.
Viscosity	Not available.

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Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials. Chlorine and Fluorine
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure	Remarks
Gasoline	LC50 Inhalation Vapor	Rat	>5610 g/m ³ analytical	4 hours	Based on Gasoline
	LC50 Inhalation Vapor	Rat	>7630 mg/m ³ Nominal	4 hours	Based on Gasoline
	LD50 Dermal	Rabbit	>2000 mg/kg	-	Based on Gasoline
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Gasoline
Ethanol	LC50 Inhalation Vapor	Rat	124.7 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	116.9 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	133.8 mg/l	4 hours	Based on Ethanol
	LD50 Oral	Rat	10470 mg/kg	-	Based on Ethanol

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Gasoline	Rabbit	Skin - Irritant	-	-	-	-	Based on Gasoline
	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Gasoline
Ethanol	Rabbit	Skin - Non-irritant to skin.	-	-	-	-	Based on Ethanol

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Rabbit	Eyes - Cornea opacity	-	-	-	-	Based on Ethanol
Rabbit	Eyes - Iris lesion	-	-	-	-	Based on Ethanol
Rabbit	Eyes - Irritant	-	-	-	-	Based on Ethanol

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Gasoline	skin	Guinea pig	Not sensitizing	Based on Gasoline

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Gasoline	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Gasoline
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Gasoline
	EPA OPPTS 870.5395	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline vapor condensate
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline
Ethanol	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Ethanol
	Equivalent to OECD 473	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Ethanol
	Equivalent to OECD 478	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Ethanol

Conclusion/Summary

May cause genetic defects.

Carcinogenicity

Product/ingredient name	Test	Species	Route	Duration	Result	Remarks
Gasoline	Equivalent to OECD 451	Rat	Inhalation	113 weeks	Negative - Inhalation - Unspecified	Based on Gasoline
	Equivalent to OECD 451	Mouse	Dermal	102 weeks	Negative - Dermal - Unspecified	Based on Gasoline
Ethanol	EPA OPPTS 870.4200	Mouse	Oral	105 weeks	Positive - Oral - Unspecified	Based on Ethanol

Section 11. Toxicological information

Equivalent to OECD - Rat Oral 104 weeks Negative - Oral - Unspecified Based on Ethanol

Conclusion/Summary May cause cancer

Classification

Product/ingredient name	OSHA	IARC	NTP
Gasoline	-	2B	-
toluene	-	3	-
xylene	-	3	-
Benzene	+	1	Known to be a human carcinogen.
ethylbenzene	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

IARC :

1 - Carcinogenic to human.

2B - Possible carcinogen to human.

3 - Not classifiable as a human carcinogen.

NTP :

Proven - Known to be human carcinogens.

Possible - Reasonably anticipated to be human carcinogens.

OSHA :

+ Potential occupational carcinogen

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Gasoline	-	Negative	-	Rat	Inhalation	2 generation
	-	-	Negative	Rat	Inhalation	14 days
Ethanol	-	Positive	-	Rat	Oral	2 generation
	-	-	Negative	Rat	Inhalation	18 days

Conclusion/Summary

Development: Suspected of damaging the unborn child.

Fertility: Not classified. Based on available data, the classification criteria are not met.

Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	Not applicable.	Narcotic effects
xylene	Category 3	Not applicable.	Respiratory tract irritation
toluene	Category 3	Not applicable.	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
cyclohexane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
toluene	Category 2	Not determined	ears
Benzene	Category 1	Not determined	blood system

Aspiration hazard

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Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact

Causes serious eye irritation.

Skin contact

Causes skin irritation.

Inhalation

Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Ingestion

Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

Adverse symptoms may include the following:
pain or irritation
watering
redness

Skin contact

Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Inhalation

Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion

Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects

Not available.

Potential delayed effects

Not available.

Long term exposure

Potential immediate effects

Not available.

Potential delayed effects

Not available.

Potential chronic health effects

General

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Carcinogenicity

May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity

May cause genetic defects.

Teratogenicity

Suspected of damaging the unborn child.

Developmental effects

No known significant effects or critical hazards.

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Fertility effects

No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Additional information

Gasoline - Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital). Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Gasoline as a mixture is classified as a 2B (possible human) carcinogen by IARC.

Gasoline engine exhaust is classified as possibly carcinogenic to humans by IARC (2B). This classification is based primarily on animal and in vitro studies of gasoline engine exhaust condensates/extracts. Studies of the gaseous exhaust stream in animals did not provide sufficient evidence for classification as a carcinogen.

Gasoline: Additional toxicity information on the components:

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

Section 11. Toxicological information

Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin.

Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

Toluene: Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material. Deliberate inhalation of high concentrations of toluene has been linked to damage of the brain, liver and kidney. Inhalation of very high concentrations of toluene, such as in cases of solvent abuse, has resulted in sudden death which may be a result of cardiac arrhythmia or central nervous system depression. Mental and/or growth retardation has been reported in children of women who deliberately inhale toluene during pregnancy (usually at thousands of ppm). Fetal developmental toxicity was observed when pregnant rats were exposed to toluene at levels of 1500 ppm. Maternal toxicity was also observed at this concentration. Prolonged, high level exposure to toluene in laboratory animals has resulted in hearing loss. Exposure studies in rats have resulted in adverse effects on the kidney, liver and central nervous system. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests. There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction including spontaneous abortion. The methodology of these studies and the reliability of the results have been questioned. In a two-generation study in rats, inhalation of toluene at levels up to 2000 ppm did not produce adverse effects on fertility or reproductive performance.

Xylenes: Xylene has been reported to cause central nervous system effects at concentrations above the recommended exposure limit. Xylene vapor becomes irritating at relatively high levels. In one study, eye irritation was reported at exposures of 460 ppm and in one person at 230 ppm after 15 minutes. In another study, no one reported eyes, nose and throat irritation at mixed xylene exposures up to 230 ppm for 30 minutes. Dermal LD50 is expected to be greater than 10g/kg in rabbits, based on test results from similar materials.

Mixed xylenes caused slight hearing loss in rats exposed to 800 ppm in the air for 14 hours/day for six weeks. There is no information available for lower concentrations; however, similar chemicals that have caused these hearing effects at similar concentrations have not caused effects at lower concentrations.

Pregnant animals exposed to xylene or its isomers have been reported to cause development toxicity in rodents when exposed by inhalation. The developmental effects observed consisted of delayed development and minor skeletal variations, but no malformations. Because of the high exposure levels used in these studies, we do not believe that these results imply an increased risk of reproductive toxicity to workers exposed to xylene levels at or below the exposure limits.

Xylene and its isomers are not genotoxic.

Technical grade xylene has been tested in a National Toxicology Program carcinogenicity study in rats and mice dosed orally for two years. There was no evidence of carcinogenicity.

Ethylbenzene: The National Toxicology Program (NTP) conducted a 13-week inhalation study with male and female rats and mice at exposure concentrations ranging from 100

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to 1000 ppm ethylbenzene. No rats or mice died during the study. Kidney, liver, and lung weights were increased in the exposed rats, while weight increases were observed only in the livers of exposed mice. Treatment-related histopathologic changes were not observed in any tissues of rats and mice.

NTP also exposed male and female rats and mice by inhalation to 0, 75, 250, or 750 ppm ethylbenzene for 2 years. There was a statistically significant increase in the number of kidney tumors in male and female rats at 750 ppm. There were also increased incidences of lung tumors in male mice and liver tumors in female mice that were statistically significant at 750 ppm. Except for the male rat kidney tumors, the incidence of the tumors were within the range observed for non-exposed animals from other studies conducted by NTP. The significance of these findings to humans is unknown. Ethylbenzene is not genotoxic. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and found it to be possibly carcinogenic to humans (Group 2B).

Ethylbenzene is not genotoxic.

This product contains trimethylbenzenes. These compounds cause irritation to the eyes, nose and respiratory tract. Repeated dermal exposure can defat and irritate the skin. Inhalation may cause dizziness and drowsiness. Studies in laboratory animals with mixtures of C9 aromatic hydrocarbons produced adverse effects on development such as increased fetal mortality, reduced fetal weight, and delayed ossification at high exposure concentrations. Effects were reduced if exposure was terminated prior to delivery. There was no evidence of reproductive toxicity.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Ethanol - Human data: In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Fetal Alcohol Syndrome in the offspring. Reduced birth weight and physical and mental defects occur. There is no evidence that such effects might be caused by exposures other than direct ingestion of alcoholic drinks. In humans high lifetime consumption of alcoholic beverages can be associated with certain cancers and effects on the liver. There is no evidence that these can be caused by exposure other than direct ingestion of alcoholic drinks (IARC 1988).

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Product/ingredient name	Species	Test/Result	Exposure	Effects	Remarks
Gasoline	Micro-organism	Acute EC50 15.41 mg/l Nominal Fresh water	40 hours	growth inhibition	-
	Algae	Acute EL50 3.1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Algae	Acute EL50 3.7 mg/l Nominal Fresh water	96 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute EL50 4.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on straight-run light gasoline
	Fish	Acute LL50 10 mg/l Nominal	96 hours	Mortality	Based on Naphtha

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		Fresh water			(petroleum), isomerisation
	Fish	Acute LL50 8.2 mg/l Nominal Fresh water	96 hours	Mortality	Based on Naphtha (petroleum), light alkylate
	Algae	Acute NOELR 0. 5 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute NOELR 0. 5 mg/l Nominal Fresh water	48 hours	Mobility	Based on Straight run gas oil
	Daphnia	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic EL50 >40 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	Fish	Chronic LL50 5.2 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Daphnia	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic NOELR 16 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	soil, plants	Chronic PNEC >0. 4 mg/kg	-	-	-
Ethanol	Algae	EC50 675 mg/l	4 days	-	Based on Ethanol
	Aquatic plants	EC50 4432 mg/l	7 days	-	Based on Ethanol

Section 12. Ecological information

Daphnia	Acute LC50 5012 mg/l	48 hours	-	Based on Ethanol
Fish	Acute LC50 153 g/l	96 hours	-	Based on Ethanol
Fish	Acute LC50 14.2 g/l	96 hours	-	Based on Ethanol
Daphnia	Chronic LC50 2 mg/l	10 days	-	Based on Ethanol
Daphnia	Chronic LC50 9.6 mg/l	9 days	-	Based on Ethanol

Conclusion/Summary Not available.

Persistence and degradability

Partially biodegradable.

Product/ingredient name	Test	Result	Remarks
Ethanol	EPA	95 % - Readily - 15 days	Based on Ethanol
	EPA	84 % - Readily - 20 days	Based on Ethanol
	EPA	74 % - Readily - 5 days	Based on Ethanol
	EPA	74 % - Readily - 10 days	Based on Ethanol

Conclusion/Summary Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethanol	-	-	Readily

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.






[United States - RCRA Toxic hazardous waste "U" List](#)

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Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239
Toluene; Benzene, methyl-	108-88-3	Listed	U220
Benzene (l,T)	71-43-2	Listed	U019
Cyclohexane (l); Benzene, hexahydro- (l)	110-82-7	Listed	U056

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN1203	UN1203	UN1203	UN1203
UN proper shipping name	GASOLINE	GASOLINE	MOTOR SPIRIT or GASOLINE or PETROL MARINE POLLUTANT	Motor spirit or Gasoline or Petrol
Transport hazard class(es)	3 	3 	3  	3 
Packing group	II	II	II	----
Environmental hazards	No.	No.	Yes.	No.
Additional information	<p>Reportable quantity 333.33 lbs / 151.33 kg [53.304 gal / 201.78 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity</p>	<p>The marine pollutant mark is not required when transported by road or rail.</p> <p>Explosive Limit and Limited Quantity Index 30</p> <p>Passenger Carrying Ship Index 100</p> <p>Passenger Carrying Road or Rail Index 5</p> <p>Special provisions 17, 82, 88</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-E, S-E</p> <p>Special provisions 243</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 5 L Packaging instructions: 353</p> <p>Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 364</p> <p>Limited Quantities - Passenger Aircraft</p>

Section 14. Transport information

	limitation: 5 L			Quantity limitation: 1 L
	Cargo aircraft Quantity limitation: 60 L			Packaging instructions: Y341
	Special provisions 144, 177, B1, B33, IB2, T4, TP1			Special provisions A100

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gasoline and spirits

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b)

All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification

Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	naphthalene	91-20-3	0 - 0.5
Supplier notification	toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	naphthalene	91-20-3	0 - 0.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

The following components are listed: XYLENE; TOLUENE; ETHYL ALCOHOL; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE

New Jersey

The following components are listed: XYLENES; BENZENE, DIMETHYL-; TOLUENE; BENZENE, METHYL-; ETHYL ALCOHOL; ALCOHOL; BENZENE; PSEUDOCUMENE; 1, 2,4-TRIMETHYL BENZENE; ETHYL BENZENE; BENZENE, ETHYL-; CYCLOHEXANE; NAPHTHALENE; MOTH FLAKES

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Section 15. Regulatory information

Pennsylvania

The following components are listed: GASOLINE; BENZENE, DIMETHYL-; BENZENE, METHYL-; DENATURED ALCOHOL; BENZENE; PSEUDOCUMENE; BENZENE, ETHYL-; CYCLOHEXANE; NAPHTHALENE

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.
ethylbenzene; naphthalene; cumene

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
toluene

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
Benzene

Other Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including carbon monoxide, a Prop 65 reproductive toxin.

Other regulations

Australia inventory (AICS)

At least one component is not listed.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

At least one component is not listed.

Japan inventory (ENCS)

At least one component is not listed.

Korea inventory (KECI)

At least one component is not listed.

Philippines inventory (PICCS)

At least one component is not listed.

Taiwan inventory (CSNN)

REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		X

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)



History

Date of issue/Date of revision

12/16/2014.

Date of previous issue

No previous validation.

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Section 16. Other information

Key to abbreviations

ACGIH = American Conference of Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS Number = Chemical Abstracts Service Registry Number
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OEL = Occupational Exposure Limit
SDS = Safety Data Sheet
STEL = Short term exposure limit
TWA = Time weighted average
UN = United Nations
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

✔ Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

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Product Name..... : Hydraulic Oil

SKIN CONTACT:

Wash with soap and water. Wash clothing separately before reuse.

EYE CONTACT:

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 – Fire Fighting Measures

SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

Suitable extinguishing media:

Use water fog, foam, dry chemical, or carbon dioxide (CO₂) to extinguish flames.

Unsuitable extinguishing media:

CAUTION: Water stream may spread fire.

HAZARDOUS COMBUSTION PRODUCTS:

Smoke, Fume, Incomplete combustion products, Oxides of carbon.

FIRE FIGHTING INSTRUCTIONS

In the event of fire, cool tanks with water spray. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

Wear a self-contained breathing apparatus and appropriate Personal protection. (See Exposure Controls/Personal Protection section 8.)

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Eliminate all ignition sources. Stop the flow of material, if this can be done without risk. Dike the spilled material, where this is possible. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Forms smooth, slippery surfaces on floors, posing an accident risk. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Vacuum or sweep up material and place in a disposal container.

Product Name..... : Hydraulic Oil

ENVIRONMENTAL PRECAUTIONS:

Prevent entry into waterways, sewers, basement or confined areas. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 – Handling And Storage

PRECAUTIONS FOR SAFE HANDLING:

Wash thoroughly after handling.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep container closed when not in use.

Section 8 – Exposure Controls / Personal Protection

EXPOSURE LIMITS:

Paraffin Oil	ACGIH TLV 5 mg/m ³ TWA	PEL 5 mg/m ³ TWA	STEL N/A
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ENGINEERING CONTROLS:

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PROTECTIVE MEASURES:

Use personal protective equipment as required.

EYE PROTECTION:

Wear safety glasses.

SKIN AND BODY PROTECTION:

Protective gloves and clothing are recommended.

HYGIENE MEASURES:

Always observe good personal hygiene measures, such as washing after handling the material before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Product Name..... : Hydraulic Oil

Section 9 – Physical And Chemical Properties

Appearance	
Physical State	Liquid
Form	No data available
Color	Light Amber
Odor	Mild
Odor Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point	> 480 °F
Flash point	434 °F
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit – upper (%)	No data available
Explosive limit – lower (%)	No data available
Vapor pressure	No data available
Density	7.251 lbs/gal
Specific Gravity	0.87
Solubility(ies)	
Solubility in water	Insoluble
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	42.8 cSt@100°F
VOC	9.7 g/l

Product Name..... : Hydraulic Oil

Section 10 – Stability And Reactivity

REACTIVITY:

Not reactive during normal use.

CHEMICAL STABILITY:

Material is stable under normal conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:

None under normal conditions.

CONDITIONS TO AVOID:

Excessive heat. High energy sources of ignition.

INCOMPATIBLE MATERIALS:

Strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS:

Incomplete combustion may produce carbon monoxide and other asphyxiants. Aldehydes. Oxides of nitrogen. Oxides of Phosphorus. Oxides of Zinc. Hydrogen sulfide and alkyl mercaptans may also be released.

Section 11 – Toxicological Information

ACUTE ORAL TOXICITY

ATEmix (Oral): 4904 mg/kg (Calculated)

ACUTE INHALATION TOXICITY

ATEmix (Inhalation): > 5.0 mg/L (Calculated)

ACUTE DERMAL TOXICITY

ATEmix (Dermal): 5000 mg/kg (Calculated)

SKIN IRRITATION

Not expected to cause skin irritation.

EYE IRRITATION

Not expected to cause eye irritation.

REPRODUCTIVE TOXICITY

No data to indicate that the product is a reproductive toxin.

SKIN SENSITIZATION

No data to indicate that the product will be a skin sensitizer.

GERM CELL MUTAGENICITY

No data to indicate that the product will be a germ cell mutagen.

CARCINOGENICITY

No components present at 0.1% or greater are listed on IARC.

Product Name..... : Hydraulic Oil

STOT-SINGLE EXPOSURE

No data to indicate that the product will cause specific target organ toxicity after single exposure.

STOT-REPEATED EXPOSURE

No data to indicate that the product will cause specific target organ toxicity after repeated exposure.

ASPIRATION HAZARD

None

Section 12 – Ecological Information

ECOTOXICITY EFFECTS

No data available.

PERSISTENCE AND DEGRADABILITY

No data available

Section 13 – Disposal Consideration

DISPOSAL INSTRUCTIONS:

According to local, state, and federal regulations.

CONTAMINATED PACKAGING:

Empty containers should be taken to an approved waste handling site for local recycling or waste disposal.

Section 14 – Transportation Information

This material is not subject to transport regulations.

Product Name..... : Hydraulic Oil

Section 15 – Regulatory Information

US REGULATIONS

SARA Sections 311 and 312

Immediate (Acute) Health Hazard: YES. Delayed (Chronic) Health Hazard: YES. Fire Hazard: NO.

Reactive Hazard: NO. Sudden Release of Pressure Hazard: NO.

SARA (313) TOXIC RELEASE INVENTORY

No known reportable quantities.

CERCLA (Comprehensive Environmental Response and Liability Act of 1980, S 103)

No known reportable quantities.

EPCRA

No known reportable quantities.

IARC

No components listed on IARC.

U.S. STATE RIGHT TO KNOW

California Proposition 65-Chemicals Known to the State to Cause Cancer
No Components Listed.

Section 16 – Other Information

Prepared by:..... Ridge Tool Company

Issue Date: August 12, 2015

Last Revision Date: August 12, 2015

RIDGE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.



SAFETY DATA SHEET

100% Synthetic 10W-40 Premium Protection Motor Oil

Date : 06/15/2014
Version : 5

Section 1. Identification

GHS product identifier : 100% Synthetic 10W-40 Premium Protection Motor Oil
Code : AMO
Product type : Liquid.

Identified uses

Lubricating oil. Not to be misted.

Supplier's details : AMSOIL INC.
One AMSOIL Center
Superior, WI 54880

Emergency telephone number (with hours of operation) : CHEMTREC: Within USA and Canada: 1-800-424-9300; Outside USA and Canada: +1 703-741-5970 (collect calls accepted) (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : AQUATIC HAZARD (ACUTE) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 10%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 10%

GHS label elements

Signal word : No signal word.

Hazard statements : Harmful to aquatic life.

Precautionary statements

Prevention : Avoid release to the environment.

Response : Not applicable.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
Product code : AMO

United States

Ingredient name	%	CAS number
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	1 - 5	84605-29-8
Cadmium	0 - 0.1	7440-43-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Maintain an open airway. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Treat symptomatically.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No special protection is required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.

Specific hazards arising from the chemical	: This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: No specific data.

Special protective actions for fire-fighters	: No special protection is required.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Put on appropriate personal protective equipment.
For emergency responders	: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
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Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Cadmium	<p>OSHA PEL Z2 (United States, 2/2013). TWA: 0.2 mg/m³ 8 hours. Form: Dust CEIL: 0.6 mg/m³ Form: Dust CEIL: 0.3 mg/m³ Form: Fume TWA: 0.1 mg/m³ 8 hours. Form: Fume</p> <p>ACGIH TLV (United States, 6/2013). TWA: 0.01 mg/m³, (as Cd) 8 hours. Form: Inhalable fraction TWA: 0.002 mg/m³, (as Cd) 8 hours. Form: Respirable fraction</p> <p>OSHA PEL (United States, 2/2013). TWA: 5 µg/m³, (as Cd) 8 hours.</p>

Under conditions which may generate mists, the following additional exposure limits are recommended:
ACGIH TLV TWA: 5 mg/m³ ; STEL: 10 mg/m³.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Clear.]

Color : Brown.

Odor : Mild/Hydrocarbon.

Odor threshold : Not available.

pH : Not available.

Melting point / Pour point : -44°C (-47.2°F)

Boiling point : Not available.

Flash point : Open cup: 228°C (442.4°F) [Cleveland.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.8633

Solubility : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic: 0.146 cm ² /s (14.6 cSt) (100°C) Kinematic: 0.905 cm ² /s (90.5 cSt) (40°C)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	LD50 Oral	Rat	3.2 g/kg	-
Cadmium	LD50 Oral	Rat	2330 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Cadmium	Category 1	Not determined	Not determined

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	170122.3 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Cadmium	Acute EC50 97 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute EC50 0.095 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 200 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 24 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 2 µg/l Fresh water	Algae - Parachlorella kessleri - Exponential growth phase	72 hours
	Chronic NOEC 0.02 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	0.56	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not applicable.

Special precautions for user : **Transport within user's premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 307: Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts; Benzene; Cadmium; Arsenic; Lead
Clean Water Act (CWA) 311: Benzene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	1 - 5	No.	No.	No.	Yes.	No.
Cadmium	0 - 0.1	No.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	84605-29-8	1 - 5
	Lead	7439-92-1	0 - 0.1
Supplier notification	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	84605-29-8	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: Distillates, hydrotreated heavy paraffinic; Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts; Distillates, solvent-dewaxed heavy paraffinic

Pennsylvania : The following components are listed: Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Paraffin oils	Yes.	No.	No.	No.
Traces Metals	Yes.	Yes.	No.	No.
Benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Cadmium	Yes.	Yes.	0.05 µg/day (inhalation)	4.1 µg/day (ingestion)
Arsenic	Yes.	No.	0.06 µg/day (inhalation)	No.
Lead	Yes.	Yes.	15 µg/day (ingestion)	Yes.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

Section 16. Other information

History

Date of issue mm/dd/yyyy : 06/15/2014
Date of previous issue : 03/15/2013
Version : 5
Prepared by : AMSOIL INC.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



SAFETY DATA SHEET

High Performance INTERCEPTOR Synthetic 2-Cycle Oil

Date : 06/15/2014
Version : 6.X

Section 1. Identification

GHS product identifier : High Performance INTERCEPTOR Synthetic 2-Cycle Oil
Code : AIT
Product type : Liquid.

Identified uses

Lubricating oil. Not to be misted.

Supplier's details : AMSOIL INC.
One AMSOIL Center
Superior, WI 54880

Emergency telephone number (with hours of operation) : CHEMTREC: Within USA and Canada: 1-800-424-9300; Outside USA and Canada: +1 703-741-5970 (collect calls accepted) (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms



Signal word : Warning

Hazard statements : Combustible liquid.
Causes serious eye irritation.
Causes skin irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from flames and hot surfaces. - No smoking. Wash hands thoroughly after handling.

Response : IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

- Storage** : Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : AIT

United States

Ingredient name	%	CAS number
Synthetic Ester Base Oil(s)*	10 - 30 30 - 60	- See below

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

*Base Oil(s): 64742-88-7

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed**Potential acute health effects**

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.

Specific hazards arising from the chemical : Combustible liquid. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Under conditions which may generate mists, the following additional exposure limits are recommended:
ACGIH TLV TWA: 5 mg/m³ ; STEL: 10 mg/m³.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Clear.]
Color	: Brown.
Odor	: Mild / Hydrocarbon.
Odor threshold	: Not available.
pH	: Not available.
Melting point / Pour point	: -58°C (-72.4°F)
Boiling point	: Not available.
Flash point	: Open cup: 84°C (183.2°F) [Cleveland.]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 0.8708
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic: 0.077 cm ² /s (7.7 cSt) (100°C) Kinematic: 0.398 cm ² /s (39.8 cSt) (40°C)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

There is no data available.

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

Name	Result
Solvent naphtha, medium aliph. Distillates, hydrotreated middle	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.


Mobility : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	Not regulated.	Not regulated.
UN proper shipping name	COMBUSTIBLE LIQUID, N.O.S. (Solvent naphtha, medium aliph.)	-	-
Transport hazard class(es)	3 	-	-
Packing group	III	-	-
Environmental hazards	No.	No.	No.
Additional information	Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials, unless transported by vessel. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes.	-	-

AERG : 128

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Synthetic Ester	10 - 30	No.	No.	No.	Yes.	No.
Solvent naphtha, medium aliph.	10 - 30	Yes.	No.	No.	No.	No.

State regulations

Massachusetts : The following components are listed: Distillates, solvent-refined light paraffinic; Distillates, hydrotreated light paraffinic

New York : None of the components are listed.

New Jersey : The following components are listed: Distillates, solvent-refined light paraffinic; Distillates, hydrotreated light paraffinic; Distillates, hydrotreated heavy paraffinic

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

Section 16. Other information

History

Date of issue mm/dd/yyyy : 06/15/2014
Date of previous issue : 03/15/2013
Version : 6.X
Prepared by : AMSOIL INC.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



SAFETY DATA SHEET

Signature Series Motor Oils, SAE 0W-20, 0W-30, 5W-20, 5W-30, 10W-30

Date : 06/15/2014
Version : 1.X

Section 1. Identification

GHS product identifier : Signature Series Motor Oils, SAE 0W-20, 0W-30, 5W-20, 5W-30, 10W-30
Code : ASM, AZO, ALM, ASL, ATM
Product type : Liquid.

Identified uses

Motor oil. Not to be misted.

Supplier's details : AMSOIL INC.
One AMSOIL Center
Superior, WI 54880

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887 (24/7)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 35%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 35%

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
Product code : ASM, AZO, ALM, ASL, ATM

United States

Ingredient name	%	CAS number
Base Oil(s)	30 - 60	Mixture

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. Maintain an open airway.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 20 minutes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Under conditions which may generate mists, the following exposure limits are recommended:
ACGIH TLV TWA: 5 mg/m³ ; STEL: 10 mg/m³.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Mild hydrocarbon.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point / Pour point** : -53 to -48°C (-63.4 to -54.4°F)
- Boiling point** : Not available.
- Flash point** : Open cup: 228 to 232°C (442.4 to 449.6°F) [Cleveland.]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.855 to 0.8607
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic: 0.076 to 0.105 cm²/s (7.6 to 10.5 cSt) (100°C)
Kinematic: 0.466 to 0.623 cm²/s (46.6 to 62.3 cSt) (40°C)

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	LD50 Oral	Rat	>5000 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Category 2	Not determined	liver

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: No known significant effects or critical hazards.
Potential delayed effects	: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects	: No known significant effects or critical hazards.
Potential delayed effects	: No known significant effects or critical hazards.

Potential chronic health effects

General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not available.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR:** Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts; Diphenylamine
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: Distillates, hydrotreated heavy paraffinic; Distillates, solvent-dewaxed heavy paraffinic

Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Traces Metals	Yes.	Yes.	No.	No.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

Section 16. Other information

History

Date of issue mm/dd/yyyy : 06/15/2014
Version : 1.X
Prepared by : AMSOIL INC.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Safety Data Sheet

Material Name: Propane

SDS No. 6182
EU/CLP GHS

Synonyms: Dimethylmethane, Liquefied Petroleum Gas (LPG), Sales Propane, Commercial Propane, Refinery Propane, Product Propane (non-odorized)

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Gas - Category 1
Gases Under Pressure - Liquefied Gas
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 2

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Extremely flammable gas.
Contains gas under pressure, may explode if heated.
May cause damage to central nervous and respiratory systems.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Do not breathe fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
IF exposed or concerned: Call a POISON CENTER or doctor/physician.

Storage

Protect from sunlight. Store in a well-ventilated place.

Safety Data Sheet

Material Name: Propane

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
74-98-6	Propane	>85
Not Available	Mixed hydrocarbons [butane (C4) and higher]	<10
74-84-0	Ethane	<10
115-07-1	Propylene	<10

Aliphatic hydrocarbons separated from natural gas having carbon numbers in the range of C2 through C4, predominantly C3 (propane and propylene). Propane offer for commercial distribution will be odorized with trace amounts of odorant (typically well below 0.1% ethyl mercaptan).

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact with eyes, hold eyelids open to allow liquid to evaporate. Cover eyes to protect from light. Seek immediate medical attention.

First Aid: Skin

Remove contaminated clothing. In case of blistering, frostbite or freeze burns seek immediate medical attention.

First Aid: Ingestion

Risk of ingestion is extremely low. However, if oral exposure occurs, seek immediate medical assistance.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.

Liquid releases flammable vapors at well below ambient temperatures and readily forms a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may travel long distances to a point of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

Use extinguishing media suitable for the surrounding material, preferably or, any extinguisher suitable for Class B fires, dry chemical, fire fighting foam, CO₂, and other gaseous agents. However, fire should not be extinguished unless flow of gas can be immediately stopped.

Unsuitable Extinguishing Media

None

Safety Data Sheet

Material Name: Propane

Fire Fighting Equipment/Instructions

Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area, particularly around ends of storage vessels. Let vessel, tank car or container burn unless leak can be stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Stop the source of the release, if safe to do so.

Materials and Methods for Clean-Up

Do not flush down sewer or drainage systems. Do not touch spilled liquid (frostbite/freeze burn hazard!). Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

Emergency Measures

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction, stay upwind and uphill, if possible. Evaluate the direction of product travel. Vapor cloud may be white, but color will dissipate as cloud disperses - fire and explosion hazard is still present!

Personal Precautions and Protective Equipment

Do not touch spilled liquid (frostbite/freeze burn hazard!).

Environmental Precautions

Do not flush down sewer or drainage systems.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Keep away from flame, sparks and excessive temperatures. Bond and ground containers. Use only in well ventilated areas.

Storage Procedures

Store only in approved containers. Bond and ground containers. Keep away from flame, sparks, excessive temperatures and open flame. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Incompatibilities

Keep away from strong oxidizers, ignition sources and heat. Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

Safety Data Sheet

Material Name: Propane

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

Propane (200-827-9)

- ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
Austria: 2000 ppm STEL [KZW] (3 X 60 min); 3600 mg/m3 STEL [KZW] (3 X 60 min)
1000 ppm TWA [TMW]; 1800 mg/m3 TWA [TMW]
Belgium: 1000 ppm TWA (as Aliphatic hydrocarbons [alkanes C1-4], gas)
Denmark: 1000 ppm TWA; 1800 mg/m3 TWA
Finland: 1100 ppm STEL; 2000 mg/m3 STEL
800 ppm TWA; 1500 mg/m3 TWA
Germany: 1000 ppm TWA AGW (exposure factor 4); 1800 mg/m3 TWA AGW (exposure factor 4)
1000 ppm TWA MAK; 1800 mg/m3 TWA MAK
4000 ppm Peak; 7200 mg/m3 Peak
Greece: 1000 ppm TWA; 1800 mg/m3 TWA
Ireland: 1000 ppm TWA
Asphyxiant
Portugal: 1000 ppm TWA [VLE-MP]
Spain: 1000 ppm TWA [VLA-ED]

Ethane (200-814-8)

- ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
Belgium: 1000 ppm TWA (as Aliphatic hydrocarbons [alkanes C1-4], gas)
Ireland: 1000 ppm TWA
Asphyxiant
Portugal: 1000 ppm TWA [VLE-MP]
Spain: 1000 ppm TWA [VLA-ED]

Propylene (204-062-1)

- ACGIH: 500 ppm TWA
Denmark: 100 ppm TWA; 172 mg/m3 TWA
Ireland: 500 ppm TWA
Asphyxiant
Portugal: 500 ppm TWA [VLE-MP]
Spain: 500 ppm TWA [VLA-ED]
Sweden: 500 ppm LLV; 900 mg/m3 LLV

Engineering Measures

Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting in classified/controlled areas.

Personal Protective Equipment: Respiratory

Use a NIOSH approved positive-pressure, supplied air respirator with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere. CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

Personal Protective Equipment: Hands

Use cold-impervious, insulating gloves where contact with liquid may occur.

Safety Data Sheet

Material Name: Propane

Personal Protective Equipment: Eyes

Where there is a possibility of liquid contact, wear splash-proof safety goggles and faceshield.

Personal Protective Equipment: Skin and Body

Where contact with liquid may occur, wear apron and faceshield.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Colorless	Odor:	Odorless
Physical State:	Gas	pH:	ND
Vapor Pressure:	109.73 psig @ 70 °F (21.1 °C)	Vapor Density:	1.56 @ 32°F (0°C)
Boiling Point:	-43.8°F (-42.1°C)	Melting Point:	ND
Solubility (H2O):	slight (62.4 ppm) @ 77 °F (25 °C)	Specific Gravity:	0.531 @ 32 °F (0 °C)
Evaporation Rate:	ND	VOC:	ND
Octanol/H2O Coeff.:	ND	Flash Point:	-156°F (-104 °C)
Flash Point Method:	PMCC	Upper Flammability Limit (UFL):	9.5
Lower Flammability Limit (LFL):	2.1	Burning Rate:	ND
Auto Ignition:	842°F (450°C)		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Keep away from strong oxidizers, ignition sources and heat.

Incompatible Products

Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Propane exhibits some degree of anesthetic action and is mildly irritating to the mucous membranes. At high concentrations propane acts as a simple asphyxiant without other significant physiological effects. High concentrations may cause death due to oxygen depletion.

B: Component Analysis - LD50/LC50

Propane (74-98-6)

Inhalation LC50 Rat 658 mg/L 4 h

Ethane (74-84-0)

Safety Data Sheet

Material Name: Propane

Inhalation LC50 Rat 658 mg/L 4 h

Propylene (115-07-1)

Inhalation LC50 Rat 658 mg/L 4 h

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Vapors are not irritating. Direct contact to skin or mucous membranes with liquefied product or cold vapor may cause freeze burns and frostbite. Contact to mucous membranes with liquefied product may cause frostbite and freeze burns. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. Skin may become inflamed and painful.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors are not irritating. However, contact with liquid or cold vapor may cause frostbite, freeze burns, and permanent eye damage.

Potential Health Effects: Ingestion

Ingestion is unlikely. Contact with mucous membranes with liquefied product may cause frostbite and freeze burns.

Potential Health Effects: Inhalation

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a "chilly" feeling, and vomiting have been reported from accidental exposures to high concentrations. This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects.

Carcinogenicity

A: General Product Information

This product is not reported to have any carcinogenic effects.

B: Component Carcinogenicity

Propylene (115-07-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 60 [1994]; Supplement 7 [1987] (Group 3 (not classifiable))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Safety Data Sheet

Material Name: Propane

Specified Target Organ General Toxicity: Single Exposure

This product may cause damage to heart.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ repeat effects.

Aspiration Respiratory Organs Hazard

This product is not reported to have any aspiration hazard effects.

* * * **Section 12 - Ecological Information** * * *

Ecotoxicity

A: General Product Information

Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing. Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapor phase in ambient air.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

* * * **Section 13 - Disposal Considerations** * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * **Section 14 - Transportation Information** * * *

IATA Information

Shipping Name: Petroleum Gases, Liquefied

UN #: 1075 **Hazard Class:** 2.1

ICAO Information

Shipping Name: Petroleum Gases, Liquefied

UN #: 1075 **Hazard Class:** 2.1

IMDG Information

Shipping Name: Petroleum Gases, Liquefied

UN #: 1075 **Hazard Class:** 2.1

* * * **Section 15 - Regulatory Information** * * *

Regulatory Information

Safety Data Sheet

Material Name: Propane

Component Analysis – Inventory

Component/CAS	EC #	EEC	CAN	TSCA
Propane 74-98-6	200-827-9	EINECS	DSL	Yes
Ethane 74-84-0	200-814-8	EINECS	DSL	Yes
Propylene 115-07-1	204-062-1	EINECS	DSL	Yes

* * * Section 16 - Other Information * * *

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet



SAFETY DATA SHEET

Signature Series Multi-Vehicle Synthetic Automatic Transmission Fluid

Date : 06/15/2014

Version : 5

Section 1. Identification

GHS product identifier : Signature Series Multi-Vehicle Synthetic Automatic Transmission Fluid

Code : ATF

Product type : Liquid.

Identified uses

Lubricating oil. Not to be misted.

Supplier's details : AMSOIL INC.
One AMSOIL Center
Superior, WI 54880

Emergency telephone number (with hours of operation) : CHEMTREC: Within USA and Canada: 1-800-424-9300; Outside USA and Canada: +1 703-741-5970 (collect calls accepted) (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : AQUATIC HAZARD (ACUTE) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 16%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 16%

GHS label elements

Signal word : No signal word.

Hazard statements : Harmful to aquatic life.

Precautionary statements

Prevention : Avoid release to the environment.

Response : Not applicable.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.
Product code : ATF

United States

Ingredient name	%	CAS number
Cadmium	0 - 0.1	7440-43-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically.
Specific treatments : No specific treatment.
Protection of first-aiders : No special protection is required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media : None known.

- Specific hazards arising from the chemical** : This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products : No specific data.

- Special protective actions for fire-fighters** : No special protection is required.
Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Put on appropriate personal protective equipment.
For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Avoid contact with used product. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Cadmium	<p>OSHA PEL Z2 (United States, 2/2013). TWA: 0.2 mg/m³ 8 hours. Form: Dust CEIL: 0.6 mg/m³ Form: Dust CEIL: 0.3 mg/m³ Form: Fume TWA: 0.1 mg/m³ 8 hours. Form: Fume</p> <p>ACGIH TLV (United States, 6/2013). TWA: 0.01 mg/m³, (as Cd) 8 hours. Form: Inhalable fraction TWA: 0.002 mg/m³, (as Cd) 8 hours. Form: Respirable fraction</p> <p>OSHA PEL (United States, 2/2013). TWA: 5 µg/m³, (as Cd) 8 hours.</p>

Under conditions which may generate mists, the following exposure limits are recommended:
ACGIH TLV TWA: 5 mg/m³ ; STEL: 10 mg/m³.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Red.

Odor : Mild / Hydrocarbon.

Odor threshold : Not available.

pH : Not available.

Melting point / Pour point : -53°C (-63.4°F)

Boiling point : Not available.

Flash point : Open cup: 234°C (453.2°F) [Cleveland.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.8408

Solubility : Not available.

Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic: 0.075 cm ² /s (7.5 cSt) (100°C) Kinematic: 0.385 cm ² /s (38.5 cSt) (40°C)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Cadmium	LD50 Oral	Rat	2330 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Cadmium	Category 1	Not determined	Not determined

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Cadmium	Acute EC50 97 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute EC50 0.095 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 200 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 24 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 2 µg/l Fresh water	Algae - Parachlorella kessleri - Exponential growth phase	72 hours
	Chronic NOEC 0.02 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not applicable.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Benzene; Ethylbenzene; Naphthalene; Cadmium; Arsenic; Lead
Clean Water Act (CWA) 311: Benzene; Ethylbenzene; Naphthalene; Xylene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Sulphur dioxide	0 - 0.1	Yes.	500	-	500	-

SARA 304 RQ : 27654867.3 lbs / 12555309.7 kg [3944769.2 gal / 14932575.8 L]

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Cadmium	0 - 0.1	No.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Lead	7439-92-1	0 - 0.1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : The following components are listed: Distillates, hydrotreated heavy paraffinic
Pennsylvania : None of the components are listed.

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Paraffin oils	Yes.	No.	No.	No.
Sulphur dioxide	No.	Yes.	No.	No.
Methanol	No.	Yes.	No.	23000 µg/day (ingestion) 47000 µg/day (inhalation)
Trimethyl phosphate	Yes.	No.	Yes.	No.
Benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Naphthalene	Yes.	No.	Yes.	No.
Cadmium	Yes.	Yes.	0.05 µg/day (inhalation)	4.1 µg/day (ingestion)
Arsenic	Yes.	No.	0.06 µg/day (inhalation)	No.

Lead	Yes.	Yes.	15 µg/day (ingestion)	Yes.
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International regulations**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Ingredient name	List name	Status
Not listed.		

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	List name	Status
Not listed.		

Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

Rotterdam Convention on Prior Inform Consent (PIC)

Ingredient name	List name	Status
Not listed.		

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Not listed.		

Section 16. Other information**History**

Date of issue mm/dd/yyyy : 06/15/2014
Date of previous issue : 01/15/2013
Version : 5
Prepared by : AMSOIL INC.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.




Safety Data Sheet

1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol <i>NOT FOR SALE IN CALIFORNIA</i>	Manufacturer: WD-40 Company Address: 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607
Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion	Telephone: Emergency only: 1-888-324-7596 (PROSAR) Information: 1-888-324-7596 Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)
Restrictions on Use: None identified	
SDS Date Of Preparation: 07/20/2014	

2 – Hazards Identification

<p>Hazcom 2012/GHS Classification: Flammable Aerosol Category 1 Gas Under Pressure: Compressed Gas Aspiration Toxicity Category 1</p> <p>Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.</p> <p>Label Elements:</p> <div style="text-align: center;">  </div> <p>DANGER! Extremely Flammable Aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways.</p> <p>Prevention Keep away from heat, sparks, open flames, hot surfaces – No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use.</p> <p>Response IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.</p> <p>Storage Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.</p> <p>Disposal Dispose of contents and container in accordance with local and national regulations.</p>
--

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3

			Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<25	Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1
Carbon Dioxide	124-38-9	2-3	Simple Asphyxiant Gas Under Pressure, Compressed Gas
Non-Hazardous Ingredients	Mixture	<10	Not Hazardous

Note: The exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

Signs and Symptoms of Exposure: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.

Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Specific Hazards Arising from the Chemical: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.

Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.

Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product

Appropriate Engineering Controls: Use in a well-ventilated area.

Personal Protection:

Eye Protection: Avoid eye contact. Always spray away from your face.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Closed Cup (concentrate)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions

Chemical Stability: Stable

Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:

Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.

Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

Chronic Effects: None expected.

Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.

Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms

Persistence and Degradability: Component are readily biodegradable.

Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.

Mobility in Soil: No data available

Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description:

UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many

states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III

Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

VOC Regulations: This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.

Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

Canadian WHMIS Classification: Class A (Compressed gas), Class B-5 (Flammable Aerosol)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

Revision Date: July 20, 2014

Supersedes: May 23, 2014

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED By: I. Kowalski

Regulatory Affairs Dept.



Material Safety Data Sheet

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PRODUCT NAME: CC-2 PREP KIT (CABLE CLEANER)
MANUFACTURER: 3M
DIVISION: Electrical Markets Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 08/07/14
Supersedes Date: 05/06/11
Document Group: 26-5533-0

This product is a kit or a multipart product which consists of multiple, independently packaged components. An SDS for each of these components is included. Please do not separate the component SDSs from this cover page. The document numbers of the SDSs for components of this product are:

26-2852-7

Revision Changes:

Section 16: Disclaimer (first paragraph) information was modified.
Section 16: Disclaimer (second paragraph) information was modified.
Kit: Component heading paragraph information was modified.
Section 16: Web address information was modified.
Section 1: Address information was modified.
Copyright information was modified.
Telephone header information was modified.
Company Telephone information was modified.
Kit: ID Number Heading information was deleted.
Kit: ID Number(s) information was deleted.

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Document Group:	26-2852-7	Version Number:	3.01
Issue Date:	04/24/15	Supersedes Date:	11/05/13

SECTION 1: Identification

1.1. Product identifier

3M™ Cable Preparation Kit CC-2 (Can)

Product Identification Numbers

78-8061-7605-9, 78-8127-6979-8, 80-6105-9299-2, 80-6112-0013-2, 80-6114-2769-3

1.2. Recommended use and restrictions on use

Recommended use

Electrical, SOLVENT SOAKED PADS FOR CLEANING CABLE

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Electrical Markets Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Liquid: Category 4.

Skin Corrosion/Irritation: Category 2.

Skin Sensitizer: Category 1.

Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements

Signal word

Warning

Symbols

Exclamation mark |

Pictograms

**Hazard Statements**

Combustible liquid.

Causes skin irritation.

May cause an allergic skin reaction.

May cause drowsiness or dizziness.

Precautionary Statements**Prevention:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Call a POISON CENTER or doctor/physician if you feel unwell.

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Keep cool.

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Isoparaffinic Hydrocarbon	64742-48-9	50 - 70
Cotton pads	None	25 - 40
D-LIMONENE	5989-27-5	5 - 20

SECTION 4: First aid measures**4.1. Description of first aid measures**

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Protect from sunlight. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Isoparaffinic Hydrocarbon	64742-48-9	Manufacturer determined	TWA: 100 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
 AIHA : American Industrial Hygiene Association
 CMRG : Chemical Manufacturer's Recommended Guidelines
 OSHA : United States Department of Labor - Occupational Safety and Health Administration
 TWA: Time-Weighted-Average
 STEL: Short Term Exposure Limit
 CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Under normal use conditions, eye exposure is not expected to be significant enough to require eye protection.

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber
 Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Nitrile
 Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of

a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid (Lint-free cloths soaked with liquid)
Specific Physical Form:	Cloth pads soaked in liquid in can or bag
Odor, Color, Grade:	citrus-like odor
Odor threshold	<i>No Data Available</i>
pH	7.0
Melting point	<i>No Data Available</i>
Boiling Point	380 °F - 480 °F
Flash Point	144 °F [<i>Test Method: Closed Cup</i>]
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>
Vapor Pressure	< 1 mmHg [<i>@ 25 °C</i>]
Vapor Density	> 1 [<i>Ref Std: AIR=1</i>]
Specific Gravity	0.76 [<i>Ref Std: WATER=1</i>]
Solubility in Water	Nil
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	1.5 centipoise
Volatile Organic Compounds	Approximately 740 g/l
VOC Less H2O & Exempt Solvents	760 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Sparks and/or flames

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Not Specified

Carbon dioxide

Not Specified

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.
Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Physical Blockage: Signs/symptoms may include cramping, abdominal pain, and constipation.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:

Single exposure may cause target organ effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Isoparaffinic Hydrocarbon	Inhalation-Vapor		LC50 estimated to be 20 - 50 mg/l
Isoparaffinic Hydrocarbon	Dermal	Rabbit	LD50 > 3,000 mg/kg
Isoparaffinic Hydrocarbon	Ingestion	Rat	LD50 > 5,000 mg/kg
D-LIMONENE	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
D-LIMONENE	Dermal	Rabbit	LD50 > 5,000 mg/kg
D-LIMONENE	Ingestion	Rat	LD50 4,400 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Isoparaffinic Hydrocarbon	Rabbit	Irritant
D-LIMONENE	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Isoparaffinic Hydrocarbon	Rabbit	No significant irritation
D-LIMONENE	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Isoparaffinic Hydrocarbon	Guinea pig	Not sensitizing
D-LIMONENE	Mouse	Sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Isoparaffinic Hydrocarbon	In vivo	Not mutagenic
Isoparaffinic Hydrocarbon	In Vitro	Some positive data exist, but the data are not sufficient for classification
D-LIMONENE	In Vitro	Not mutagenic
D-LIMONENE	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Isoparaffinic Hydrocarbon	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Isoparaffinic Hydrocarbon	Inhalation	Human and animal	Some positive data exist, but the data are not sufficient for classification
D-LIMONENE	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Isoparaffinic Hydrocarbon	Inhalation	Not toxic to development	Rat	NOAEL 2.4 mg/l	during organogenesis
D-LIMONENE	Ingestion	Not toxic to male reproduction	Rat	NOAEL 150 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 750 mg/kg/day	prematuring & during gestation
D-LIMONENE	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Isoparaffinic Hydrocarbon	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isoparaffinic Hydrocarbon	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Isoparaffinic Hydrocarbon	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 6.5 mg/l	4 hours
D-LIMONENE	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Isoparaffinic Hydrocarbon	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 4.6 mg/l	6 months
Isoparaffinic Hydrocarbon	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1.9 mg/l	13 weeks
Isoparaffinic Hydrocarbon	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 0.6 mg/l	90 days
Isoparaffinic Hydrocarbon	Inhalation	bone, teeth, nails, and/or hair blood liver muscles	All data are negative	Rat	NOAEL 5.6 mg/l	12 weeks
Isoparaffinic Hydrocarbon	Inhalation	heart	All data are negative	Multiple animal species	NOAEL 1.3 mg/l	90 days
D-LIMONENE	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 75 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	heart endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system muscles nervous system respiratory system	All data are negative	Rat	NOAEL 600 mg/kg/day	103 weeks

Aspiration Hazard

Name	Value
Isoparaffinic Hydrocarbon	Aspiration hazard
D-LIMONENE	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. As a disposal alternative, Dispose of waste product in a permitted industrial waste facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 2 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: *2 Flammability: 2 Physical Hazard: 0 Personal Protection: B

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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SAFETY DATA SHEET

1. Identification

Product identifier	Cable Clean® HF™ High Voltage Cleaner (High Flash)
Other means of identification	
Product code	02170
Recommended use	Splice and termination cleaner for high voltage cables
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols Gases under pressure	Category 1 Compressed gas
Health hazards	Skin corrosion/irritation Specific target organ toxicity, single exposure Aspiration hazard	Category 2 Category 3 narcotic effects Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Avoid breathing mist or vapor. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing gas. Wash thoroughly after handling. Wear protective gloves.
Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
Storage	Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates (petroleum), hydrotreated light		64742-47-8	90 - 100
Carbon dioxide		124-38-9	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Diarrhea. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of eyes and mucous membranes. Irritation of nose and throat. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Alcohol resistant foam. Dry chemicals. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Avoid breathing gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid breathing mist or vapor. Avoid breathing gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m ³
		5000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m ³
		30000 ppm
	TWA	9000 mg/m ³
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		5000 ppm
	TWA	100 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Not available.

Skin protection

Hand protection

Wear protective gloves such as: Nitrile. Neoprene.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Aerosol.
Color	Clear.
Odor	Mild hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-72.4 °F (-58 °C) estimated
Initial boiling point and boiling range	430 °F (221.1 °C) estimated
Flash point	204 °F (95.6 °C) Tag Closed Cup
Evaporation rate	Slow.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.6 % estimated
Flammability limit - upper (%)	5.5 % estimated
Vapor pressure	1624.9 hPa estimated
Vapor density	4.5 (air = 1)
Relative density	0.82 estimated
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	456.8 °F (236 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	97.2 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Prolonged inhalation may be harmful. May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Diarrhea. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects.
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Product	Species	Test Results
Cable Clean® HF™ High Voltage Cleaner (High Flash)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2058.4412 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	5.3519 mg/l, 4 Hours estimated
<i>Oral</i>		
LD50	Rat	5146.103 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
Cable Clean® HF™ High Voltage Cleaner (High Flash)		
Aquatic		
<i>Acute</i>		
Fish	LC50	Fish 2.2643 mg/l, 96 hours estimated
Components	Species	Test Results
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
Aquatic		
<i>Acute</i>		
Fish	LC50	Bluegill (Lepomis macrochirus) 2.2 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	Not available.
Bioaccumulative potential	Not available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	The dispensed liquid product is not a RCRA hazardous waste (See 40 CFR Part 261.20 - 261.33). Empty container can be recycled. Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Dispose in accordance with all applicable regulations.
Hazardous waste code	Not regulated.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. New Jersey Worker and Community Right-to-Know Act

Carbon dioxide (CAS 124-38-9)
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. Massachusetts RTK - Substance List

Carbon dioxide (CAS 124-38-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Carbon dioxide (CAS 124-38-9)
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. Rhode Island RTK

None.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 97.2 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products Not regulated

VOC content (CA) 0 %

VOC content (OTC) 0 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-19-2014
Prepared by	Allison Cho
Version #	01
Further information	CRC # 493A
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 2 Flammability: 3 Instability: 0
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



Revision date: Initial version
Date of issue: 04.23.2015

Page: 1/10

Trade name:	Brush Seater and Commutator Cleaner
--------------------	--

SECTION 1: Identification

Product identifier: **Brush Seater and Commutator Cleaner.**
Synonyms: None available.
Product Code Number: All "23" Series.
SDS number: ID004
Recommended use: Commutator Cleaner.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Carcinogenicity, Category 1A.

Environmental hazards

Not classified as a physical hazard under GHS criteria.

GHS Signal word: **DANGER.**

GHS Hazard statement(s): May cause cancer.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Response:** P308 + P313 - If exposed or concerned: Get medical advice/ attention.
- Storage:** P405 - Store locked up.
- Disposal:** P501 - Dispose of contents/ container to an approved waste disposal plant.

**Hazard(s) not otherwise
Classified (HNOC):**

None known.

Percentage of ingredient(s) of unknown acute toxicity:

86% of the mixture consists of ingredients of unknown acute toxicity (oral/dermal/inhalation).

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Silica Sand	14808-60-7	< 90%

Note: The balance of the ingredients are not classified as hazardous or below the threshold concentration, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: In case of contact, Wash skin with soap and for at least 15 minutes. Remove contaminated clothing and thoroughly clean before reuse. Get medical attention if symptoms persist.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms persist.

Ingestion: Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: May cause cancer.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens.

Combustion products - Carbon monoxide, Carbon dioxide.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source, shovel or vacuum spilled material. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Keep away from children, infants and pets. Keep in dry location. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.
Storage class (TRGS 510): Non Combustible Solids

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Silica Sand (as respirable dust)	30/(% SiO ₂ + 2) mg/m ³	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Silica Sand (as respirable dust)	0.025 mg/m ³	No data available

NIOSH Exposure Limits		
Substance	TWA	STEL
Silica Sand (as respirable dust)	0.05 mg/m ³	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep dust below exposure limits.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant safety glasses is recommended.

Skin and Hand protection: None normally required.

Respiratory protection: Where protection from nuisance levels of dusts are desired, use type N95 (US) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH/OSHA.

Other: None required.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Solid
Form:	White porous solid.
Color:	White.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	None
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	No data available
Solubility(ies):	Insoluble.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Other information:	
% Volatile by volume:	None
Percent solids by weight:	~ 100%

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: None.
Incompatible materials: Avoid contact hydrofluoric acid.
Hazardous decomposition Products: None known.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Dust may be released in use.
Ingestion: Not an expected route of entry.
Skin: Not an expected route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
May cause lung cancer, pulmonary fibrosis and is a suspected human carcinogen.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Detailed below.

Numerical measures of toxicity:
Ingredient Information:

Substance	Test Type (species)	Value
Silica Sand	LD ₅₀ Oral (Rat)	No data available
	LD ₅₀ Dermal (Rabbit)	No data available
	TCLo Inhalation - Lowest published toxic concentration (Mouse)	40 mg/kg

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: No information available on the mixture, however none of the components have been classified to cause skin corrosion/irritation (or are below the concentration threshold for classification).

Serious eye damage/eye irritation: No information available on the mixture, however none of the components have been classified to cause eye damage/irritation (or are below the concentration threshold for classification).

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a

respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization:

No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).

Germ cell mutagenicity:

No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Carcinogenicity:

Silica Dust (respirable fraction) has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (2012).

Reproductive toxicity:

No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Single exposure:**

No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Repeat exposure:**

No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).

Aspiration hazard:

No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).

Further information:

No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Silica Sand	LC ₅₀	Fish - <i>Gambusia affinis</i> (Mosquito fish)	No data available
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: 14808-60-7 Crystalline Quartz Silica - 86%.

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: Silica, crystalline (airborne particles of respirable size) is listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: Silica Sand (as Silica, crystalline, quartz) is listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: Silica Sand (as Silica - crystalline) is listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Silica Sand (as Silica, quartz) is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Silica Sand (as Quartz) is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2A – Very Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: April 23, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Safety Data Sheet

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Document Group:	26-5994-4	Version Number:	6.01
Issue Date:	03/27/15	Supersedes Date:	03/21/14

SECTION 1: Identification

1.1. Product identifier

3M Scotchkote 020 Cleaner

Product Identification Numbers

GR-2001-1551-1, GR-2001-2214-5, GR-2001-2215-2, GR-2001-4360-4, GR-2001-4369-5

1.2. Recommended use and restrictions on use

Recommended use

Equipment Cleaner., Equipment Cleaner

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	3M United Kingdom Electrical Markets Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Liquid: Category 3.

Aspiration Hazard: Category 1.

Reproductive Toxicity: Category 2.

Carcinogenicity: Category 2.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (central nervous system): Category 3.

Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Flammable liquid and vapor.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

Suspected of causing cancer.

Causes damage to organs:

sensory organs |

Causes damage to organs through prolonged or repeated exposure:

nervous system |

sensory organs |

Precautionary Statements

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Keep container tightly closed.

Use explosion-proof electrical/ventilating/lighting equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Do NOT induce vomiting.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF exposed or concerned: Get medical advice/attention.

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

Store in a well-ventilated place. Keep cool.

Keep container tightly closed.

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

1% of the mixture consists of ingredients of unknown acute oral toxicity.

1% of the mixture consists of ingredients of unknown acute dermal toxicity.

1% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
1-METHOXY-2-PROPANOL	107-98-2	50 - 60 Trade Secret *
XYLENE	1330-20-7	20 - 30 Trade Secret *
ETHYL 3-ETHOXYPROPIONATE	763-69-9	10 - 20 Trade Secret *
ETHYLBENZENE	100-41-4	5 - 10 Trade Secret *
2-METHOXY-1-PROPANOL	1589-47-5	< 1 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

Do not induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Eliminate all ignition sources if safe to do so. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Protect from sunlight. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
ETHYLBENZENE	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
ETHYLBENZENE	100-41-4	OSHA	TWA:435 mg/m3(100 ppm)	
ETHYLBENZENE	100-41-4	CMRG	TWA:25 ppm;STEL:75 ppm	
1-METHOXY-2-PROPANOL	107-98-2	ACGIH	TWA:50 ppm;STEL:100 ppm	A4: Not class. as human carcin
XYLENE	1330-20-7	OSHA	TWA:435 mg/m3(100 ppm)	
XYLENE	1330-20-7	ACGIH	TWA:100 ppm;STEL:150 ppm	A4: Not class. as human carcin
XYLENE	1330-20-7	CMRG	TWA:50 ppm;STEL:75 ppm	
ETHYL 3-ETHOXYPROPIONATE	763-69-9	CMRG	TWA:50 ppm;STEL:100 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Provide local exhaust ventilation at transfer points. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

None required.

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

In case of inadequate ventilation wear respiratory protection. An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form: Liquid

Odor, Color, Grade:	Aromatic odor; Clear color
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	>= 120 °C
Flash Point	23 °C [<i>Test Method: Closed Cup</i>]
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1 %
Flammable Limits(UEL)	11.5 %
Vapor Pressure	8.84 mmHg [<i>@ 25 °C</i>]
Vapor Density	>=1 [<i>Ref Std: AIR=1</i>]
Density	0.905 g/ml
Specific Gravity	0.905 [<i>Ref Std: WATER=1</i>]
Solubility In Water	0 %
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	>= 300 °C
Decomposition temperature	<i>No Data Available</i>
Viscosity	<i>No Data Available</i>
Volatile Organic Compounds	905 g/l [<i>Details: EU Definition</i>]

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Temperatures above the boiling point

Sparks and/or flames

Heat

10.5. Incompatible materials

Combustibles

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be

relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause target organ effects:

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

<u>Ingredient</u>	<u>CAS No.</u>	<u>Class Description</u>	<u>Regulation</u>
ETHYLBENZENE	100-41-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
1-METHOXY-2-PROPANOL	Dermal	Rabbit	LD50 11,000-13,800 mg/kg
1-METHOXY-2-PROPANOL	Inhalation-Vapor (4 hours)	Rat	LC50 56 mg/l
1-METHOXY-2-PROPANOL	Ingestion	Rat	LD50 6,100 mg/kg
XYLENE	Dermal	Rabbit	LD50 > 4,200 mg/kg
XYLENE	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
XYLENE	Ingestion	Rat	LD50 3,523 mg/kg
ETHYL 3-ETHOXYPROPIONATE	Dermal	Rabbit	LD50 4,080 mg/kg
ETHYL 3-ETHOXYPROPIONATE	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.4 mg/l
ETHYL 3-ETHOXYPROPIONATE	Ingestion	Rat	LD50 3,200 mg/kg
ETHYLBENZENE	Dermal	Rabbit	LD50 15,433 mg/kg
ETHYLBENZENE	Inhalation-Vapor (4 hours)	Rat	LC50 17.4 mg/l
ETHYLBENZENE	Ingestion	Rat	LD50 4,769 mg/kg
2-METHOXY-1-PROPANOL	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
1-METHOXY-2-PROPANOL	Not available	Minimal irritation
XYLENE	Rabbit	Mild irritant
ETHYL 3-ETHOXYPROPIONATE	Rabbit	No significant irritation
ETHYLBENZENE	Rabbit	Mild irritant
2-METHOXY-1-PROPANOL	Professional judgement	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
1-METHOXY-2-PROPANOL	Not available	Mild irritant
XYLENE	Rabbit	Mild irritant
ETHYL 3-ETHOXYPROPIONATE	Rabbit	Mild irritant
ETHYLBENZENE	Rabbit	Moderate irritant
2-METHOXY-1-PROPANOL	Professional judgement	Severe irritant

Skin Sensitization

Name	Species	Value
1-METHOXY-2-PROPANOL	Guinea pig	Not sensitizing
ETHYL 3-ETHOXYPROPIONATE	Guinea pig	Not sensitizing
ETHYLBENZENE	Human	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
1-METHOXY-2-PROPANOL	In Vitro	Not mutagenic
XYLENE	In Vitro	Not mutagenic
XYLENE	In vivo	Not mutagenic
ETHYL 3-ETHOXYPROPIONATE	In Vitro	Not mutagenic
ETHYLBENZENE	In vivo	Not mutagenic
ETHYLBENZENE	In Vitro	Some positive data exist, but the data are not sufficient for classification
2-METHOXY-1-PROPANOL	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
1-METHOXY-2-PROPANOL	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
XYLENE	Dermal	Rat	Not carcinogenic
XYLENE	Ingestion	Multiple animal species	Not carcinogenic
XYLENE	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
ETHYLBENZENE	Inhalation	Multiple animal species	Carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
1-METHOXY-2-PROPANOL	Inhalation	Not toxic to male reproduction	Rat	NOAEL 11.0 mg/l	2 generation
1-METHOXY-2-PROPANOL	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3,328 mg/kg/day	2 generation
1-METHOXY-2-PROPANOL	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 3.7 mg/l	2 generation
1-METHOXY-2-PROPANOL	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3,328 mg/kg	2 generation
1-METHOXY-2-PROPANOL	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 370 mg/kg	during gestation
1-METHOXY-2-PROPANOL	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 3.7 mg/l	2 generation
XYLENE	Ingestion	Not toxic to female reproduction	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
XYLENE	Ingestion	Not toxic to male reproduction	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
XYLENE	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
XYLENE	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	during organogenesis
XYLENE	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	during gestation
ETHYLBENZENE	Inhalation	Some positive developmental data exist, but the data are not sufficient for	Rat	NOAEL 4.3 mg/l	prematuring & during

		classification			gestation
2-METHOXY-1-PROPANOL	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,800 mg/kg/day	10 days
2-METHOXY-1-PROPANOL	Inhalation	Not toxic to male reproduction	Rat	NOAEL 10.5 mg/l	28 days
2-METHOXY-1-PROPANOL	Inhalation	Toxic to development	Rabbit	NOAEL .5 mg/l	during organogenesis

Lactation

Name	Route	Species	Value
XYLENE	Ingestion	Mouse	Does not cause effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1-METHOXY-2-PROPANOL	Dermal	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 1,800 mg/kg	13 weeks
1-METHOXY-2-PROPANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
XYLENE	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
XYLENE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
XYLENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
XYLENE	Inhalation	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 3.5 mg/l	not available
XYLENE	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	
XYLENE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
XYLENE	Ingestion	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 250 mg/kg	not applicable
ETHYLBENZENE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
ETHYLBENZENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
2-METHOXY-1-PROPANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
2-METHOXY-1-PROPANOL	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1-METHOXY-2-PROPANOL	Dermal	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 1,800 mg/kg/day	13 weeks
1-METHOXY-2-PROPANOL	Dermal	hematopoietic system	All data are negative	Rabbit	NOAEL 1,000 mg/kg/day	3 weeks
1-METHOXY-2-PROPANOL	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for	Rat	NOAEL 3.7 mg/l	13 weeks

			classification			
1-METHOXY-2-PROPANOL	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 11 mg/l	13 weeks
1-METHOXY-2-PROPANOL	Inhalation	hematopoietic system	All data are negative	Rat	NOAEL 2.2 mg/l	10 days
1-METHOXY-2-PROPANOL	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 920 mg/kg/day	13 weeks
XYLENE	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
XYLENE	Inhalation	auditory system	May cause damage to organs through prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
XYLENE	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	
XYLENE	Inhalation	heart endocrine system hematopoietic system muscles kidney and/or bladder respiratory system	All data are negative	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
XYLENE	Ingestion	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 900 mg/kg/day	2 weeks
XYLENE	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,500 mg/kg/day	90 days
XYLENE	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	
XYLENE	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	All data are negative	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
ETHYL 3-ETHOXYPROPIONATE	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 6 mg/l	90 days
ETHYL 3-ETHOXYPROPIONATE	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 6 mg/l	17 days
ETHYL 3-ETHOXYPROPIONATE	Inhalation	heart liver immune system kidney and/or bladder	All data are negative	Rat	NOAEL 6 mg/l	17 days
ETHYL 3-ETHOXYPROPIONATE	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	17 days
ETHYL 3-ETHOXYPROPIONATE	Ingestion	hematopoietic system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days
ETHYL 3-ETHOXYPROPIONATE	Ingestion	kidney and/or bladder respiratory system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	17 days
ETHYLBENZENE	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
ETHYLBENZENE	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	103 weeks

ETHYLBENZENE	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 3.4 mg/l	28 days
ETHYLBENZENE	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.4 mg/l	5 days
ETHYLBENZENE	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3.3 mg/l	103 weeks
ETHYLBENZENE	Inhalation	bone, teeth, nails, and/or hair muscles	All data are negative	Multiple animal species	NOAEL 4.2 mg/l	90 days
ETHYLBENZENE	Inhalation	heart immune system respiratory system	All data are negative	Multiple animal species	NOAEL 3.3 mg/l	2 years
ETHYLBENZENE	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 680 mg/kg/day	6 months
2-METHOXY-1-PROPANOL	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.1 mg/l	28 days
2-METHOXY-1-PROPANOL	Inhalation	bone marrow	All data are negative	Rat	NOAEL 10.5 mg/l	28 days
2-METHOXY-1-PROPANOL	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,800 mg/kg/day	10 days

Aspiration Hazard

Name	Value
XYLENE	Aspiration hazard
ETHYLBENZENE	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
ETHYLBENZENE	100-41-4	5 - 10
XYLENE	1330-20-7	20 - 30
XYLENE (Benzene, 1,2-dimethyl-)	1330-20-7	20 - 30
XYLENE (Benzene, 1,3-dimethyl-)	1330-20-7	20 - 30
XYLENE (Benzene, 1,4-dimethyl-)	1330-20-7	20 - 30
XYLENE (Benzene, dimethyl-)	1330-20-7	20 - 30

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 **Flammability:** 3 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: *2 **Flammability:** 3 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Revision date: Initial version
Date of issue: 05.20.2015

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Trade name:	Electronic Switch and Contact Cleaner
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SECTION 1: Identification

Product identifier: **Electronic Switch and Contact Cleaner.**
Synonyms: None available.
Product Code Number: 40-610.
SDS number: ID011
Recommended use: Solvent cleaner.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Flammable liquids, Category 2.
Gases under pressure, Liquefied gas.

Health hazards

Acute Toxicity, (Oral), Category 4.
Acute Toxicity, (Inhalation), Category 4.
Eye irritation, Category 2A.
Specific target organ toxicity - single exposure, Category 3, Central nervous system.

Environmental hazards

Not classified as an environmental hazard under GHS criteria.

GHS Signal word: **WARNING.**

GHS Hazard statement(s): H225 Highly flammable liquid and vapor.

H280 Contains gas under pressure; may explode if heated.
H302+H332 Harmful if swallowed or if inhaled.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
May displace oxygen and cause rapid suffocation.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

Prevention:

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
P241 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing dust/fume/gas/mist/ vapors/spray.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/eye protection/face protection.

Response:

P301+P312- If swallowed: Call a poison center/doctor if you feel unwell.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330 - Rinse mouth.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use Water, Alcohol foam, Dry chemical or Carbon dioxide (CO₂) to extinguish.

Storage: P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P410 + P403 - Protect from sunlight. Store in a well-ventilated place.

Disposal: P501 - Dispose of contents/containers to an approved disposal site in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:
35% of the mixture consists of ingredients of unknown acute toxicity (oral/ inhalation).
100% of the mixture consists of ingredients of unknown acute toxicity (dermal).

SECTION 3: Composition/information on ingredients

Mixture: Hydrocarbon blend.

Chemical name	CAS#	Concentration (weight %)
Aliphatic Petroleum Solvent	64742-89-8	60-70%
1,1-Difluoroethane	75-37-6	20-30%
Isopropyl alcohol	67-63-0	8 – 10%

Note: The balance of the ingredients are not classified as hazardous or under the concentration limit to be classified as hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: Move to fresh air. Use oxygen or artificial respiration if needed. Get medical attention if symptoms persist.

Skin contact: Wash off with warm water and soap. Get medical attention if irritation develops or persists.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion: Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

Most important symptoms/effects, acute and delayed: Irritating to eyes. Irritating to respiratory system. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.
In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Water. Alcohol foam. Dry chemical. Carbon dioxide (CO₂).
Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Vapor or gas may spread to distant ignition sources and flash back. Runoff to sewer may cause fire or explosion hazard.

Combustion products - Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for fire-fighters: Containers should be cooled with water to prevent vapor pressure build up. Cool containers with flooding quantities of water until well after fire is out. Move containers from fire area if you can do so without risk. For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Stop the flow of material, if this is without risk.

Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. After removal flush contaminated area thoroughly with water.

SECTION 7: Handling and Storage

Precautions for safe handling: Pressurized container: Do not pierce or burn, even after use. Do not smoke while using or until sprayed surface is thoroughly dry. Do not use if spray button is missing or defective. Do not re-use empty containers. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes. Wear personal protective equipment. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Contents under pressure. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Keep away from heat, sparks and open flame. Avoid exposure to long periods of sunlight. Keep out of the reach of children.
Level 2 Aerosol.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Aliphatic Petroleum Solvent	500 ppm	No data available
1,1 Difluoroethane	No data available	No data available
Isopropyl Alcohol	400 ppm	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Aliphatic Petroleum Solvent	300 ppm 1370 mg/m ³	No data available
1,1 Difluoroethane	No data available	No data available
Isopropyl Alcohol	200 ppm	400 ppm

USA. NIOSH Recommended Exposure Limits		
Substance	TWA	STEL
Aliphatic Petroleum Solvent	No data available	No data available
1,1 Difluoroethane	1000 ppm (WEEL)	No data available
Isopropyl Alcohol	400 ppm 980 mg/m ³	500 ppm 1225 mg/m ³

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep dust below exposure limits. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant chemical goggles are recommended.

Skin and Hand protection: Chemical resistant gloves should be worn. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: Wear positive pressure self-contained breathing apparatus (SCBA). If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

Other: None required.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state: Liquid
Form: Compressed liquefied gas containing colorless solvent.
Color: Colorless.
Odor: Solvent.
Odor threshold: No data available
pH: Not applicable.
Melting point/freezing point: No data available
Initial boiling point and boiling range: 168.8 °F (76.1 °C) estimated
Flash point: -52 °F (-46.7 °C)
Evaporation rate: No data available

Flammability (solid, gas):	33.48 kJ/g established.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	44 - 54 psig @ 70°F
Vapor density:	No data available
Relative Density:	0.7605 estimated
Solubility(ies):	Negligible.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Other information:	
Density:	0.7604 g/cm ³ estimated

SECTION 10: Stability and Reactivity

Reactivity:	Risk of ignition.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	Heat, flames and sparks.
Incompatible materials:	Avoid strong oxidizers.
Hazardous decomposition Products:	No hazardous decomposition products are known.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation:	Inhalation is an expected route of entry.
Ingestion:	Ingestion is not an expected route of entry.
Skin:	Skin contact is an expected route of entry.
Eyes:	Eye contact is an expected route of entry.

Target Organs: Central nervous system. Lungs.

Symptoms related to the physical, chemical, and toxicological characteristics:

Contact with eyes may cause irritation.
Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Intentional misuse by concentrating and inhaling the product can be harmful or fatal.
Prolonged inhalation may be harmful.
Exposure by ingestion of an aerosol is unlikely.
May cause delayed lung damage.
Components of the product may be absorbed into the body by ingestion.

Delayed and immediate effects and chronic effects from short or long-term exposure:

May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage.

Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May cause delayed lung injury.

Signs and symptoms - Discomfort in the chest. Narcosis. Coughing. Defatting of the skin. Skin irritation.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Aliphatic Petroleum Solvent	LD ₅₀ Oral (Rat)	> 8000 mg/kg
	LD ₅₀ Dermal (Rabbit)	> 4000 mg/kg
	LC ₅₀ Inhalation (Rat)	3400 ppm (4h)
1,1-Difluoroethane	LD ₅₀ Oral (Rat)	No data available
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation (Rat)	> 437500 ppm (4h)
Isopropyl Alcohol	LD ₅₀ Oral (Rat)	5045 mg/kg
	LD ₅₀ Dermal (Rabbit)	12800 mg/kg
	LC ₅₀ Inhalation (Rat)	16000 ppm (8h)

Product Acute Toxicity Estimates:

Acute Oral Toxicity: No data available.

Acute Dermal Toxicity LD₅₀: 4405 mg/kg estimated, Rat.

Acute Inhalation Toxicity No data available.

Skin corrosion/irritation: Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Serious eye damage/eye irritation: Contact with eyes may cause irritation.

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization: No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).

Germ cell mutagenicity: No information available on the mixture, however none of the components have been classified for

germ cell mutagenicity (or are below the concentration threshold for classification).

Carcinogenicity:

No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

Reproductive toxicity:

No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Single exposure:**

This material is expected to cause damage to organs (central nervous system and lungs) from a single exposure.

**Specific target organ toxicity-
Repeat exposure:**

No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).

Aspiration hazard:

No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).

Further information:

No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data:

LC50 12.04 mg/L, Fish, 96 Hours.
EC50 829 mg/L, Daphnia, 48 Hours.
IC50 4340 mg/L, Algae, 72 Hours.

Ingredient Information:

Substance	Test Type	Species	Value
Aliphatic	LC ₅₀	Fish	No data available

Petroleum Solvent	EC ₅₀	Aquatic invertebrate	No data available
	EC ₅₀	Algae	No data available
1,1-Difluoroethane	LC ₅₀	Fish	No data available
	EC ₅₀	Aquatic invertebrate	No data available
	EC ₅₀	Algae	No data available
Isopropanol	LC ₅₀	Fish - - Pimephales promelas (fathead minnow)	9640 mg/l (96h)
	EC ₅₀	Invertebrate Daphnia (water flea)	5102 mg/l (24h)
	EC ₅₀	Algae - Desmodesmus subspicatus (green algae)	> 2000mg/l (72h)

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: Components of this product have been identified as having potential environmental concerns.

SECTION 13: Disposal considerations

Disposal instructions:

Contents under pressure. Dispose of this material and its container to hazardous or special waste collection point. Do not incinerate sealed containers. If discarded, this product is considered a RCRA ignitable waste, D001.

D001: Waste Flammable material with a flash point <140 F.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties.

Use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

Land transport DOT

UN number	UN 1950
UN proper shipping name	Aerosols
Transport hazard class(es)	2.1
Packing group, if necessary	N/a
Special provisions	153, N82
Packaging exceptions	LTD QTY
Packaging non bulk	None
Packaging bulk	None

Further information Until 12/31/2013, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/13 and may be used now in place of the "Consumer Commodity ORM-D" marking but not concurrently.

Maritime transport IMDG

UN number	UN 1950
Proper shipping name	AEROSOLS
Transport hazard class(es)	2.1
Packing group, if necessary	N/a
Packaging exceptions	LTD QTY
Item	5F
Labels required	None

Air transport ICAO-TI and IATA-DGR

UN number	UN 1950
UN proper shipping name	Aerosols, Flammable
Transport hazard class(es)	2.1
Packing group, if necessary	N/a
Packaging exceptions	LTD QTY
Labels required	2.1

Environmental hazards

Marine pollutant: No.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

None.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, or are exempt as required, on the TSCA inventory.

CERCLA Hazardous Substance List, 40 CFR 302.4: None

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 311 Hazardous Substances: Yes

Section 311/312 (40 CFR 370):

Acute (Immediate) Health Hazard:	Yes
Chronic (delayed) Health Hazard:	No
Fire Hazard:	Yes
Pressure Hazard:	Yes
Reactivity Hazard:	No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA:

Isopropyl Alcohol	67-63-0	1.0 % de minimis concentration (only if manufactured by the strong acid process, no supplier notification)
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STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: Solvent Naptha (Petroleum), light aliphatic, 1,1-Difluoroethane and 2-propanol are listed on the Massachusetts Right to Know List.

New Jersey Right to Know: Solvent Naptha (Petroleum), light aliphatic, 1,1-Difluoroethane and 2-propanol are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Solvent Naptha (Petroleum), light aliphatic, 1,1-Difluoroethane and 2-propanol are listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: A (Compressed Gas), B2 (Flammable/combustible material), D2B (Toxic material \geq 1%).

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: May 20, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



SAFETY DATA SHEET

1. Identification

Product identifier **Contact Cleaner 2000® Precision Cleaner**

Other means of identification

Product code 02140

Recommended use Precision electronics cleaner

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.
Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service

24-Hour Emergency (CHEMTREC) 800-272-4620

800-424-9300 (US)

703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols Gases under pressure	Category 2 Compressed gas
Health hazards	Acute toxicity, oral Serious eye damage/eye irritation Specific target organ toxicity, single exposure Aspiration hazard	Category 4 Category 2A Category 3 narcotic effects Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Flammable aerosol. Contains gas under pressure; may explode if heated. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes serious eye irritation. May cause drowsiness or dizziness. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing gas, mist or vapor. Do not eat, drink or smoke when using this product. Wear protective gloves and eye/face protection. Wash hands thoroughly after handling. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Rinse mouth. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

35.61% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
COzol® 401		Proprietary	80 - 90
Carbon dioxide		124-38-9	5 - 10
Decafluoropentane	HFC 43-10mee	138495-42-8	5 - 10
Methanol		67-56-1	< 0.2

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT give epinephrine (adrenaline). Call a POISON CENTER or doctor/physician.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis. Immediately give 2 glasses of water. Do NOT give stimulants. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause drowsiness or dizziness.
Indication of immediate medical attention and special treatment needed	Because of possible disturbances of cardiac rhythm, catecholamine drugs such as adrenaline should be used with special caution and only in situations of emergency life support. Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Water. Water spray. Foam. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. In the event of fire, cool tanks with water spray.
General fire hazards	Flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors or mists. Avoid breathing gas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Collect spillage. Dike far ahead of spill for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage**Precautions for safe handling**

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not taste or swallow. Avoid breathing mist or vapor. Avoid breathing gas. Avoid contact with eyes. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of the reach of children.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m3
Methanol (CAS 67-56-1)	PEL	5000 ppm
		260 mg/m3
		200 ppm
Trans-1,2-dichloroethylene (CAS 156-60-5)	PEL	790 mg/m3
		200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm
Methanol (CAS 67-56-1)	TWA	5000 ppm
	STEL	250 ppm
	TWA	200 ppm
Trans-1,2-dichloroethylene (CAS 156-60-5)	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
		9000 mg/m3
Methanol (CAS 67-56-1)	STEL	5000 ppm
		325 mg/m3
		250 ppm
		260 mg/m3
Trans-1,2-dichloroethylene (CAS 156-60-5)	TWA	200 ppm
		790 mg/m3
		200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Methanol (CAS 67-56-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves such as: Nitrile. Neoprene. Polyvinyl alcohol (PVA). Viton®.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA). Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Aerosol.

Color

Clear. Colorless.

Odor

Slight ethereal.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

-112 °F (-80 °C) estimated

Initial boiling point and boiling range

104.2 °F (40.1 °C) estimated

Flash point

None (Tag Closed Cup)

Evaporation rate

Fast.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

2 % estimated

Flammability limit - upper (%)

19.9 % estimated

Vapor pressure

3308.2 hPa estimated

Vapor density

> 1 (air = 1)

Relative density

1.27 estimated

Solubility (water)

Slight.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature	860 °F (460 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	95 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.
Incompatible materials	Strong oxidizing agents. Strong bases. Strong acids. Caustics. Alkali metals. Alkaline earth metals. Powdered metal.
Hazardous decomposition products	Carbonyl halides. Hydrogen fluoride. Hydrogen chloride. Phosgene. Formaldehyde. Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. With high exposure levels, effects can include central nervous system (CNS) depression, unconsciousness and cardiac arrhythmia. Product vapors displace air and can cause suffocation especially in a confined space.
Skin contact	Prolonged skin contact may cause temporary irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Eye contact	Causes serious eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
Contact Cleaner 2000® Precision Cleaner		
Acute		
<i>Dermal</i>		
LD50	Rabbit	7574.293 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	43807.8203 ppm, 4 hours estimated 940.073 mg/l, 4 hours estimated
<i>Oral</i>		
LD50	Rat	1645.8026 mg/kg estimated
Subchronic		
<i>Inhalation</i>		
LC50	Rat	7274.0498 ppm, 90 days estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Not expected to be hazardous by OSHA criteria.

Specific target organ toxicity - single exposure	Narcotic effects.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results	
Contact Cleaner 2000® Precision Cleaner			
<i>Acute</i>			
Crustacea	EC50	Daphnia	83.8284 mg/l, 48 hours estimated
Fish	LC50	Fish	93.6062 mg/l, 96 hours estimated
Components	Species	Test Results	
Decafluoropentane (CAS 138495-42-8)			
<i>Acute</i>			
Other	EC50	Pseudokirchnerella subcapitata	> 120 mg/l, 72 hours
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	11.7 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	27.2 mg/l, 96 hours
		Rainbow trout, donaldson trout (Oncorhynchus mykiss)	13.9 mg/l, 96 hours
		Zebra danio (Danio rerio)	13 mg/l, 96 hours
<i>Chronic</i>			
Crustacea	NOEC	Water flea (Daphnia magna)	1.72 mg/l, 21 days
Methanol (CAS 67-56-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Decafluoropentane	2.7, Pow at 20 °C
Methanol	-0.77

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products The dispensed liquid product is not a RCRA hazardous waste (See 40 CFR Part 261.20 - 261.33). Empty container can be recycled. Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.

Hazardous waste code Not regulated.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1

Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	
Decafluoropentane (CAS 138495-42-8)	1.0 % One-Time Export Notification only.
SARA 304 Emergency release notification	
Not regulated.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	
Not listed.	
CERCLA Hazardous Substance List (40 CFR 302.4)	
Trans-1,2-dichloroethylene (CAS 156-60-5)	
CERCLA Hazardous Substances: Reportable quantity	
Trans-1,2-dichloroethylene (CAS 156-60-5)	1000 lbs
Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.	
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	
Not regulated.	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	
Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Immediate Hazard - Yes
Hazard categories Delayed Hazard - No
 Fire Hazard - Yes
 Pressure Hazard - Yes
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations**US. New Jersey RTK - Substances: Listed substance**

Carbon dioxide (CAS 124-38-9)
 Methanol (CAS 67-56-1)
 Trans-1,2-dichloroethylene (CAS 156-60-5)

US. Massachusetts RTK - Substance List

Carbon dioxide (CAS 124-38-9)
 Trans-1,2-dichloroethylene (CAS 156-60-5)

US. Pennsylvania RTK - Hazardous Substances

Carbon dioxide (CAS 124-38-9)
 Methanol (CAS 67-56-1)
 Trans-1,2-dichloroethylene (CAS 156-60-5)

US. Rhode Island RTK

Methanol (CAS 67-56-1)
 Trans-1,2-dichloroethylene (CAS 156-60-5)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Methanol (CAS 67-56-1) Listed: March 16, 2012

Volatile organic compounds (VOC) regulations**EPA**

VOC content (40 CFR 51.100(s)) 57.5 %
Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as an Electronic Cleaner. This product is not compliant to be sold for use in California. This product is compliant in all other states.
VOC content (CA) 95 %
VOC content (OTC) 57.5 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
 A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-04-2014
Prepared by Allison Cho

Version #	01
Further information	CRC # 657B
HMIS® ratings	Health: 2 Flammability: 2 Physical hazard: 1 Personal protection: B
NFPA ratings	Health: 2 Flammability: 2 Instability: 1
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



Revision date: Initial version
Date of issue: 05.03.2015

Page: 1/10

Trade name:	Duct Seal
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SECTION 1: Identification

Product identifier: **Duct Seal.**
Synonyms: None available.
Product Code Number: 31-601, 31-605.
SDS number: ID008
Recommended use: Duct Sealer.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards
Not classified as a physical hazard under GHS criteria

Health hazards
Carcinogenicity, Category 1A.

Environmental hazards
Not classified as an environmental hazard under GHS criteria.

GHS Signal word: **DANGER.**
GHS Hazard statement(s): May cause cancer.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Response:** P308 + P313 - IF exposed or concerned: Get medical advice/ attention.
- Storage:** P405 - Store locked up.
- Disposal:** P501 - Dispose of contents/ container to an approved waste disposal plant.

Hazard(s) not otherwise Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:
Not applicable.

SECTION 3: Composition/information on ingredients

Mixture: Butyl Rubber Composite

Chemical name	CAS#	Concentration (weight %)
Crystalline Quartz Silica	14808-60-7	< 1%

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: In case of contact, Wash skin with soap and for at least 15 minutes. Remove contaminated clothing and thoroughly clean before reuse. Get medical attention if symptoms persist.

Eye contact: In case of contact, do not remove. Get medical attention.

Ingestion: Not likely. If ingested, constipation or blockage may occur. Seek medical attention.

Most important symptoms/effects, acute and delayed: May cause cancer.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Use water, foam, carbon dioxide or dry chemical.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: None expected.
Combustion products - Oxides of nitrogen and carbon may evolve.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source. Avoid allowing material to dry before clean-up. Flush area with water. Apply absorbent and sweep up. Dispose of as solid fill. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Wash hands with soap and water before eating. Keep away from children, infants and pets. Keep in cool, dry location. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEEL (15 min)
Crystalline Quartz Silica	30/(% SiO ₂ + 2) mg/m ³	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEEL (15 min)
Crystalline Quartz Silica	0.025 mg/m ³	No data available

NIOSH Exposure Limits		
Substance	TWA	STEEL
Crystalline Quartz Silica	0.05 mg/m ³	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep dust below exposure limits.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant safety glasses or goggles are recommended.

Skin and Hand protection: None normally required. For sensitive individuals, protect skin from contact. Use cotton gloves if required.

Respiratory protection: None normally required.

Other: None required.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Solid
Form:	Dark gray putty.
Color:	Dark gray.
Odor:	Mild rubber odor.
Odor threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	None
Flash point:	590°C
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	1.65
Solubility(ies):	Negligible.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Other information:	
% Volatile by volume:	2%
Volatile Organic Compounds (VOC) (as packaged, minus water)	17 grams/liter
Percent solids by weight:	~ 98%

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated

conditions of use.
Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: None.
Incompatible materials: Avoid strong oxidizers, acids and bases.
Hazardous decomposition Products: None known.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: Skin contact is a primary route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:

May cause lung cancer, pulmonary fibrosis and is a suspected human carcinogen.

Delayed and immediate effects and chronic effects from short or long-term exposure:

Detailed below.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Crystalline Quartz Silica	LD ₅₀ Oral (Rat)	No data available
	LD ₅₀ Dermal (Rabbit)	No data available
	TCLo Inhalation - Lowest published toxic concentration (Mouse)	40 mg/kg

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: No information available on the mixture, however none of the components have been classified to cause skin corrosion/irritation (or are below the concentration threshold for classification).

Serious eye damage/eye irritation: No information available on the mixture, however none of the components have been classified to cause eye damage/irritation (or are below the concentration threshold for classification).

Respiratory sensitization:	No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).
Skin sensitization:	No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	Crystalline Quartz Silica has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (2012).
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).
Further information:	No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Crystalline Quartz Silica	LC ₅₀	Fish	No data available
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: 14808-60-7 Crystalline Quartz Silica – 0.5%.

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: Silica, crystalline (airborne particles of respirable size) is listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: Silica, crystalline (airborne particles of respirable size) is listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: Silica, crystalline (airborne particles of respirable size) is listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Silica, crystalline (airborne particles of respirable size) is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Silica, crystalline (airborne particles of respirable size) is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2A – Very Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: May 3, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.




SAFETY DATA SHEET

1. Identification

Product identifier	Minimal Expansion Foam
Other means of identification	
Product code	14077
Recommended use	Foam insulator and sealant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Gases under pressure	Liquefied gas
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Reproductive toxicity	Effects on or via lactation
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	Contains gas under pressure; may explode if heated. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause harm to breast-fed children. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.	

Precautionary statement

Prevention

Obtain special instructions before use. Do not puncture or incinerate container. Do not expose to heat or store at temperatures above 49°C/120°F. Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe gas. Do not breathe mist or vapor. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Wear eye/face protection. Wash thoroughly after handling. In case of inadequate ventilation wear respiratory protection. Avoid release to the environment.

Response

If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If exposed or concerned: Get medical attention. If experiencing respiratory symptoms: Call a poison center/doctor. Collect spillage.

Storage

Store locked up. Protect from sunlight. Store in a well-ventilated place. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Polypropylene polyol diphenylmethanediisocyanate prepolymer		9048-57-1	50 - 60
1,1,1,2-Tetrafluoroethane	HFC-134A	811-97-2	10 - 20
Alkanes, C14-17, chloro		85535-85-9	10 - 20
Diphenylmethanediisocyanate, isomers and homologues		9016-87-9	5 - 10
Tris(2-chloroisopropyl) phosphate		13674-84-5	5 - 10

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Drink plenty of water. Do not induce vomiting. Call a physician immediately.

Most important symptoms/effects, acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Rash. Dermatitis. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water spray. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media	Water. None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not breathe gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Keep combustibles (wood, paper, oil, etc.) away from spilled material. The product is immiscible with water and will sediment in water systems. Stop the flow of material, if this is without risk. Prevent product from entering drains. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 1 Aerosol. Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)	Ceiling	0.2 mg/m3
		0.02 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)	TWA	0.005 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)	Ceiling	0.2 mg/m ³
	TWA	0.02 ppm
		0.05 mg/m ³
		0.005 ppm

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
1,1,1,2-Tetrafluoroethane (CAS 811-97-2)	TWA	4240 mg/m ³
		1000 ppm

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. General ventilation normally adequate. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear protective gloves such as: Rubber. Nitrile.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties**Appearance**

Physical state	Liquid.
Form	Aerosol.
Color	Tan.
Odor	Mild petroleum.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	None (Tag Closed Cup)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	3326.4 hPa estimated

Vapor density	Not available.
Relative density	1.2
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	22.5 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Oxidizing agents. Acids. Alcohols.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Hydrogen cyanide (hydrocyanic acid).

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Health injuries are not known or expected under normal use.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Rash. Dermatitis.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction. May cause respiratory irritation.

Product	Species	Test Results
Minimal Expansion Foam		
Acute		
Dermal		
LD50	Rat	66667 mg/kg estimated
Inhalation		
LC50	Rat	4920 mg/m ³ , 4 hours estimated 4.6 mg/l estimated
Oral		
LD50	Rat	15556 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Diphenylmethanediisocyanate, isomers and homologues 3 Not classifiable as to carcinogenicity to humans.
(CAS 9016-87-9)

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity	May cause harm to breastfed babies.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not likely, due to the form of the product.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Toxic to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Partition coefficient n-octanol / water (log Kow)	
1,1,1,2-Tetrafluoroethane	1.274
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	This product is not a RCRA hazardous waste (See 40 CFR Part 261.20 – 261.33). Empty containers may be recycled. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.
Hazardous waste code	Not regulated.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable, Limited Quantity
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Label(s)	2.2
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	Not available.
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	2L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

UN number UN1950
UN proper shipping name AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)
Class 2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS F-D, S-U
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

TSCA Chemical Action Plans, Chemicals of Concern

Alkanes, C14-17, chloro (CAS 85535-85-9) Short-Chain Chlorinated Paraffins (SCCPs) and Other Chlorinated Paraffins Action Plan
Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9) Methylene Diphenyl Diisocyanate (MDI) And Related Compounds Action Plan [RIN 2070-ZA15]

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

CERCLA Hazardous Substance List (40 CFR 302.4)

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9) Listed.

CERCLA Hazardous Substances: Reportable quantity

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9) 5000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312
Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Tris(2-chloroisopropyl) phosphate (CAS 13674-84-5)
Alkanes, C14-17, chloro (CAS 85535-85-9)
Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

US. Massachusetts RTK - Substance List

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

US. Rhode Island RTK

Diphenylmethanediisocyanate, isomers and homologues (CAS 9016-87-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 2.9 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products Not regulated

VOC content (CA) 2.9 %

VOC content (OTC) 2.9 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	02-13-2015
Revision date	08-28-2015
Prepared by	Allison Cho
Version #	02
Further information	Not available.

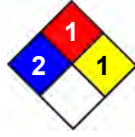
HMIS® ratings

Health: 2*
Flammability: 1
Physical hazard: 1
Personal protection: B

NFPA ratings

Health: 2
Flammability: 1
Instability: 1

NFPA ratings



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Article Information Sheet

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This Article Information Sheet is provided as a courtesy in response to a customer request. A Safety Data Sheet (SDS) has not been prepared for these product(s) because they are articles. Articles are not subject to the Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200(b)(6)(v)). As defined in this standard: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical or health risk to employees.

Document Group:	05-4723-2	Version Number:	2.00
Issue Date:	12/11/14	Supersedes Date:	Initial Issue

SECTION 1: Identification

1.1. Product identifier

3M(TM) Fire Barrier Wrap Strips FS-195+

Product Identification Numbers

44-0028-0035-5, 44-0028-0036-3, 44-0042-9350-0, 98-0400-2222-4, 98-0400-2369-3, 98-0400-5226-2

1.2. Recommended use and restrictions on use

Recommended use

Fire stopping penetrations in floors & walls to prevent flame and smoke passage.

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Intumescent Material and Foil	None	60 - 100

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

No need for first aid is anticipated.

Skin Contact:

No need for first aid is anticipated.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

SECTION 5: Fire-fighting measures

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:

Solid

Odor, Color, Grade:

Material is dark brown to brick red, laminated on one side with aluminum foil, negligible odor

Odor threshold

Not Applicable

pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Specific Gravity	1.5 g/cm ³
Solubility In Water	<i>No Data Available</i>
Solubility- non-water	<i>Not Applicable</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	< 1 % weight
VOC Less H₂O & Exempt Solvents	< 1 g/l

SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

SECTION 11: Toxicological information

Inhalation:

No health effects are expected

Skin Contact:

No health effects are expected

Eye Contact:

No health effects are expected

Ingestion:

No health effects are expected

Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

California Proposition 65

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
Nickel	7440-02-0	Carcinogen

WARNING: This product contains a chemical known to the State of California to cause cancer.

For additional regulatory information on this product, refer to www.3M.com/regs.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	05-4723-2	Version Number:	2.00
Issue Date:	12/11/14	Supersedes Date:	Initial Issue

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Safety Data Sheet

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Document Group:	21-2441-0	Version Number:	9.00
Issue Date:	08/14/14	Supersedes Date:	08/14/14

SECTION 1: Identification

1.1. Product identifier

3M Fire Barrier Moldable Putty + Pads

Product Identification Numbers

44-0042-9351-8, 44-0042-9352-6, 98-0400-5524-0, 98-0400-5525-7, 98-0400-5526-5, 98-0400-5547-1

1.2. Recommended use and restrictions on use

Recommended use

Passive fire protection in industrial applications

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2A.

Skin Sensitizer: Category 1.

2.2. Label elements

Signal word

Warning

Symbols

Exclamation mark |

Pictograms

**Hazard Statements**

Causes serious eye irritation.
May cause an allergic skin reaction.

Precautionary Statements**Prevention:**

Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

4% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Zinc Borate 2335	138265-88-0	10 - 30 Trade Secret *
Polymer NJTS Reg. No. 04499600-7177	Trade Secret*	10 - 30 Trade Secret *
Polybutylene	9003-29-6	10 - 30 Trade Secret *
Sodium Silicate	1344-09-8	10 - 30 Trade Secret *
Methyl Esters of Hydrogenated Rosin	8050-15-5	10 - 30 Trade Secret *
Melamine Phosphate	41583-09-9	7 - 13 Trade Secret *
Glass Wool	65997-17-3	3 - 7 Trade Secret *
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	1 - 5 Trade Secret *
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	1 - 5 Trade Secret *
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	25068-38-6	1 - 5 Trade Secret *
Water	7732-18-5	1 - 5 Trade Secret *
Rayon Fiber	None	1 - 5 Trade Secret *
Amorphous Silica	112945-52-5	1 - 5 Trade Secret *
Rosin	8050-09-7	< 1 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade

secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate

authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
SILICA, AMORPHOUS	112945-52-5	OSHA	TWA concentration:0.8 mg/m ³ ;TWA:20 millions of particles/cu. ft.	
Glass Wool	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m ³	
Rosin	8050-09-7	ACGIH	Limit value not established:	Cntrl all exposr-low as possib, Dermal/Respiratory Sensitizer

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective

clothing.

Gloves made from the following material(s) are recommended: Neoprene

Nitrile Rubber

Natural Rubber

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - Neoprene
Apron – Nitrile

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Putty
Odor, Color, Grade:	Red putty with pine-like odor
Odor threshold	<i>No Data Available</i>
Melting point	<i>Not Applicable</i>
Flash Point	No flash point
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Specific Gravity	1.25 [Ref Std: WATER=1]
Solubility In Water	<i>No Data Available</i>
Solubility- non-water	<i>No Data Available</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>No Data Available</i>
Volatile Organic Compounds	< 1 % weight
VOC Less H2O & Exempt Solvents	< 1 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Substance

Condition

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Carcinogenicity:

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Class Description</u>	<u>Regulation</u>
Generic: GLASS FILAMENTS	65997-17-3	Anticipated human carcinogen	National Toxicology Program Carcinogens
Generic: GLASS FILAMENTS	65997-17-3	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

<u>Name</u>	<u>Route</u>	<u>Species</u>	<u>Value</u>
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Zinc Borate 2335	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate 2335	Ingestion	Rat	LD50 > 10,000 mg/kg

Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Polybutylene	Dermal	Rat	LD50 > 10,250 mg/kg
Polybutylene	Ingestion	Rat	LD50 > 34,600 mg/kg
Polymer NJTS Reg. No. 04499600-7177	Dermal	Rabbit	LD50 > 2,000 mg/kg
Polymer NJTS Reg. No. 04499600-7177	Ingestion	Rat	LD50 > 5,000 mg/kg
Melamine Phosphate	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
Melamine Phosphate	Ingestion	Rat	LD50 > 4,000 mg/kg
Glass Wool	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass Wool	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Butadiene-Styrene-Meta-Divinylbenzene Polymer	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	Ingestion	Rat	LD50 > 40,000 mg/kg
Rosin	Dermal	Rabbit	LD50 > 2,500 mg/kg
Rosin	Ingestion	Rat	LD50 7,600 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Sodium Silicate	Rabbit	Corrosive
Polybutylene	Rabbit	Minimal irritation
Polymer NJTS Reg. No. 04499600-7177		No significant irritation
Glass Wool		No significant irritation
Butadiene-Styrene-Meta-Divinylbenzene Polymer		Minimal irritation
Amorphous Silica	Rabbit	No significant irritation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Rabbit	Mild irritant
Rosin	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Sodium Silicate	Rabbit	Corrosive
Polybutylene	Rabbit	Mild irritant
Glass Wool		No significant irritation
Amorphous Silica	Rabbit	No significant irritation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Rabbit	Moderate irritant
Rosin	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Sodium Silicate	Mouse	Not sensitizing
Amorphous Silica	Human and animal	Not sensitizing
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Human and animal	Sensitizing
Rosin	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Human	Some positive data exist, but the data are not sufficient for classification
Rosin	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
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Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Glass Wool	In Vitro	Some positive data exist, but the data are not sufficient for classification
Amorphous Silica	In Vitro	Not mutagenic
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Glass Wool	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 mg/kg/day	during gestation
Amorphous Silica	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Not toxic to development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
Sodium Silicate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	blood	All data are negative	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	heart liver	All data are negative	Rat	NOAEL	8 weeks

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					1,259 mg/kg/day	
Polybutylene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.07 mg/l	2 weeks
Polybutylene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.7 mg/l	2 weeks
Glass Wool	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL not available	occupational exposure
Amorphous Silica	Inhalation	respiratory system silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	auditory system heart endocrine system hematopoietic system liver eyes kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days

Aspiration Hazard

Name	Value
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Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Zinc Borate 2335 (ZINC COMPOUNDS)	138265-88-0	10 - 30

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this product are in compliance with the chemical notification requirements of TSCA.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	21-2441-0	Version Number:	9.00
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Safety Data Sheet

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Document Group:	16-0641-7	Version Number:	14.00
Issue Date:	08/14/14	Supersedes Date:	02/07/11

SECTION 1: Identification

1.1. Product identifier

3M(TM) Fire Barrier Moldable Putty Stix MP+

Product Identification Numbers

42-0016-4776-9, 44-0042-9356-7, 44-0042-9357-5, 44-0042-9358-3, 44-0042-9360-9, 98-0400-5417-7

1.2. Recommended use and restrictions on use

Recommended use

Passive fire protection in industrial applications

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2A.

Skin Sensitizer: Category 1.

2.2. Label elements

Signal word

Warning

Symbols

Exclamation mark |

Pictograms

**Hazard Statements**

Causes serious eye irritation.
May cause an allergic skin reaction.

Precautionary Statements**General:**

Keep out of reach of children.

Prevention:

Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

2% of the mixture consists of ingredients of unknown acute oral toxicity.
7% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Sodium Silicate	1344-09-8	10 - 30 Trade Secret *
Polymer NJTS Reg. No. 04499600-7315	Trade Secret*	10 - 30 Trade Secret *
Petrolatum	8009-03-8	10 - 30 Trade Secret *
Zinc Borate	138265-88-0	10 - 30 Trade Secret *
Melamine Phosphate	41583-09-9	7 - 13 Trade Secret *
Polybutylene	9003-29-6	7 - 13 Trade Secret *
Glass Wool	65997-17-3	3 - 7 Trade Secret *
Butadiene-Styrene-Meta-Divinylbenzene Polymer	26471-45-4	3 - 7 Trade Secret *
Amorphous Silica	112945-52-5	1 - 5 Trade Secret *
Rayon Fiber	None	< 5 Trade Secret *
Water	7732-18-5	1 - 5 Trade Secret *
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	62258-49-5	< 2 Trade Secret *
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	25068-38-6	< 2 Trade Secret *
Rosin	8050-09-7	< 1 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities

Store away from areas where product may come into contact with food or pharmaceuticals.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
SILICA, AMORPHOUS	112945-52-5	OSHA	TWA concentration:0.8 mg/m ³ ;TWA:20 millions of particles/cu. ft.	
Glass Wool	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m ³	
MINERAL OILS, HIGHLY-REFINED OILS	8009-03-8	ACGIH	TWA(inhalable fraction):5 mg/m ³	A4: Not class. as human carcin
Paraffin oil	8009-03-8	OSHA	TWA(as mist):5 mg/m ³	
Rosin	8050-09-7	ACGIH	Limit value not established:	Cntrl all exposr-low as possib, Dermal/Respiratory Sensitizer

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls**8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)**Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective

clothing.

Gloves made from the following material(s) are recommended: Polymer laminate

Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Putty
Odor, Color, Grade:	Red putty with negligible odor
Odor threshold	No Data Available
Melting point	Not Applicable
Boiling Point	Not Applicable
Flash Point	Flash point > 93 °C (200 °F)
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Specific Gravity	1.25 [Ref Std: WATER=1]
Solubility In Water	No Data Available
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Volatile Organic Compounds	< 1 % weight
VOC Less H2O & Exempt Solvents	< 1 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Aldehydes	Not Specified
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects**Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Zinc Borate	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate	Ingestion	Rat	LD50 > 10,000 mg/kg
Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Petrolatum	Dermal		LD50 estimated to be > 5,000 mg/kg
Petrolatum	Ingestion	Rat	LD50 > 5,000 mg/kg
Polymer NJTS Reg. No. 04499600-7315	Dermal	Rabbit	LD50 > 2,000 mg/kg
Polymer NJTS Reg. No. 04499600-7315	Ingestion	Rat	LD50 > 5,000 mg/kg
Polybutylene	Dermal	Rat	LD50 > 10,250 mg/kg
Polybutylene	Ingestion	Rat	LD50 > 34,600 mg/kg
Melamine Phosphate	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg

Melamine Phosphate	Ingestion	Rat	LD50 > 4,000 mg/kg
Glass Wool	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass Wool	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Butadiene-Styrene-Meta-Divinylbenzene Polymer	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Alpha-Methylstyrene-Isoamylene-Piperylene Polymer	Ingestion	Rat	LD50 > 40,000 mg/kg
Rosin	Dermal	Rabbit	LD50 > 2,500 mg/kg
Rosin	Ingestion	Rat	LD50 7,600 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Sodium Silicate	Rabbit	Corrosive
Polymer NJTS Reg. No. 04499600-7315		No significant irritation
Polybutylene	Rabbit	Minimal irritation
Glass Wool		No significant irritation
Butadiene-Styrene-Meta-Divinylbenzene Polymer		Minimal irritation
Amorphous Silica	Rabbit	No significant irritation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Rabbit	Mild irritant
Rosin	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Sodium Silicate	Rabbit	Corrosive
Polybutylene	Rabbit	Mild irritant
Glass Wool		No significant irritation
Amorphous Silica	Rabbit	No significant irritation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Rabbit	Moderate irritant
Rosin	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Sodium Silicate	Mouse	Not sensitizing
Amorphous Silica	Human and animal	Not sensitizing
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Human and animal	Sensitizing
Rosin	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Human	Some positive data exist, but the data are not sufficient for classification
Rosin	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Glass Wool	In Vitro	Some positive data exist, but the data are not sufficient for classification
Amorphous Silica	In Vitro	Not mutagenic
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	In Vitro	Some positive data exist, but the data are not

sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Glass Wool	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 mg/kg/day	during gestation
Amorphous Silica	Ingestion	Not toxic to female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not toxic to male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not toxic to development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Not toxic to female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Not toxic to male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	Not toxic to development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	Not toxic to development	Rat	NOAEL 750 mg/kg/day	2 generation

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
Sodium Silicate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	blood	All data are negative	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	heart liver	All data are negative	Rat	NOAEL 1,259 mg/kg/day	8 weeks
Polybutylene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.07 mg/l	2 weeks
Polybutylene	Inhalation	liver	Some positive data exist, but the data are not sufficient for	Rat	NOAEL 0.7 mg/l	2 weeks

			classification			
Glass Wool	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL not available	occupational exposure
Amorphous Silica	Inhalation	respiratory system silicosis	All data are negative	Human	NOAEL Not available	occupational exposure
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Dermal	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol-Epichlorohydrin Polymer	Ingestion	auditory system heart endocrine system hematopoietic system liver eyes kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	28 days

Aspiration Hazard

Name	Value
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Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D007 (Chromium)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Zinc Borate (ZINC COMPOUNDS)	138265-88-0	10 - 30

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	16-0641-7	Version Number:	14.00
Issue Date:	08/14/14	Supersedes Date:	02/07/11

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determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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Safety Data Sheet

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Document Group:	09-5451-1	Version Number:	26.00
Issue Date:	06/20/14	Supersedes Date:	08/18/13

SECTION 1: Identification

1.1. Product identifier

3M Brand Fire Barrier CP-25WB+

Product Identification Numbers

42-0016-4710-8, 42-0016-4715-7, 42-0016-4716-5, 98-0400-5380-7, 98-0400-5381-5, 98-0400-5382-3, 98-0400-5383-1, 98-0400-5406-0, 98-0400-5456-5, 98-0400-5562-0, 98-0400-5573-7, 98-0400-5610-7, 98-0400-5629-7

1.2. Recommended use and restrictions on use

Recommended use

Fire Protection, Used as Firestop in buildings.

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

2.2. Label elements

Signal word

Warning

Symbols

Not applicable

Pictograms

Not applicable

Hazard Statements

Causes eye irritation.

Precautionary Statements

General:

Keep out of reach of children.

Prevention:

Wash thoroughly after handling.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

2.3. Hazards not otherwise classified

None.

25% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Zinc Borate 2335	138265-88-0	10 - 30 Trade Secret *
Polymer (NJTS Reg. No. 04499600-7270)	Trade Secret*	10 - 30 Trade Secret *
Water	7732-18-5	10 - 30 Trade Secret *
Sodium Silicate	1344-09-8	10 - 30 Trade Secret *
Ethylhexyldiphenyl phosphate	1241-94-7	3 - 7 Trade Secret *
Oxide glass chemicals	65997-17-3	1 - 5 Trade Secret *
Iron oxide	1309-37-1	1 - 5 Trade Secret *
Polyethylene Glycol	25322-68-3	1 - 5 Trade Secret *
Triphenyl phosphate	115-86-6	< 1.0 Trade Secret *
Di-2-ethylhexylphenyl phosphate	16368-97-1	< 1.0 Trade Secret *
Polyoxyethylene monoocetylphenyl ether	9036-19-5	< 1.0 Trade Secret *
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	55965-84-9	< 0.001 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid eye contact. Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities

Keep cool. Store away from heat. Store away from areas where product may come into contact with food or pharmaceuticals. Store in a dry place.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Triphenyl phosphate	115-86-6	ACGIH	TWA:3 mg/m3	
Triphenyl phosphate	115-86-6	OSHA	TWA:3 mg/m3	

Iron oxide	1309-37-1	ACGIH	TWA(respirable fraction):5 mg/m3	
Iron oxide	1309-37-1	OSHA	TWA(as fume):10 mg/m3	
ROUGE	1309-37-1	OSHA	TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3	
Polyethylene Glycol	25322-68-3	AIHA	TWA(as particulate):10 mg/m3	
Oxide glass chemicals	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
 AIHA : American Industrial Hygiene Association
 CMRG : Chemical Manufacturer's Recommended Guidelines
 OSHA : United States Department of Labor - Occupational Safety and Health Administration
 TWA: Time-Weighted-Average
 STEL: Short Term Exposure Limit
 CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Butyl Rubber

Neoprene

Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form: Solid
Specific Physical Form: Paste
Odor, Color, Grade: Red with negligible odor

Odor threshold	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Flash Point	No flash point
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>

Specific Gravity	1.35 [<i>Ref Std: WATER=1</i>]
Solubility in Water	Complete
Solubility- non-water	<i>No Data Available</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>No Data Available</i>
Volatile Organic Compounds	< 1 g/l
VOC Less H2O & Exempt Solvents	< 1 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified
Oxides of Phosphorus	Not Specified

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient

classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Polymer (NJTS Reg. No. 04499600-7270)	Ingestion	Rat	LD50 > 2,000 mg/kg
Zinc Borate 2335	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate 2335	Ingestion	Rat	LD50 > 10,000 mg/kg
Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Ethylhexyldiphenyl phosphate	Dermal	Rabbit	LD50 > 7,940 mg/kg
Ethylhexyldiphenyl phosphate	Ingestion	Rat	LD50 > 24,000 mg/kg
Iron oxide	Dermal	Not available	LD50 3,100 mg/kg
Iron oxide	Ingestion	Not available	LD50 3,700 mg/kg
Polyethylene Glycol	Dermal	Rabbit	LD50 > 20,000 mg/kg
Polyethylene Glycol	Ingestion	Rat	LD50 32,770 mg/kg
Oxide glass chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Oxide glass chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Polyoxyethylene monoocetylphenyl ether	Dermal	Rabbit	LD50 > 3,000 mg/kg
Polyoxyethylene monoocetylphenyl ether	Ingestion	Rat	LD50 > 500 mg/kg
Triphenyl phosphate	Dermal	Rabbit	LD50 > 7,900 mg/kg
Triphenyl phosphate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 50 mg/l
Triphenyl phosphate	Ingestion	Rat	LD50 > 3,000 mg/kg
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Dermal	Rabbit	LD50 87 mg/kg
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.33 mg/l

3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Rat	LD50 40 mg/kg
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ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polymer (NJTS Reg. No. 04499600-7270)	Rabbit	Minimal irritation
Sodium Silicate	Rabbit	Corrosive
Iron oxide	Rabbit	No significant irritation
Polyethylene Glycol	Rabbit	Minimal irritation
Oxide glass chemicals		No significant irritation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Polymer (NJTS Reg. No. 04499600-7270)		Mild irritant
Sodium Silicate	Rabbit	Corrosive
Iron oxide	Rabbit	No significant irritation
Polyethylene Glycol	Rabbit	Mild irritant
Oxide glass chemicals		No significant irritation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Sodium Silicate	Mouse	Not sensitizing
Iron oxide	Human	Some positive data exist, but the data are not sufficient for classification
Polyethylene Glycol	Guinea pig	Not sensitizing
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Human and animal	Sensitizing

Photosensitization

Name	Species	Value
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Human and animal	Not sensitizing

Respiratory Sensitization

Name	Species	Value

Germ Cell Mutagenicity

Name	Route	Value
Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Iron oxide	In Vitro	Not mutagenic
Polyethylene Glycol	In Vitro	Not mutagenic
Polyethylene Glycol	In vivo	Not mutagenic
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	In vivo	Not mutagenic
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Iron oxide	Inhalation	Human	Some positive data exist, but the data are not

			sufficient for classification
Polyethylene Glycol	Ingestion	Rat	Not carcinogenic
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Dermal	Mouse	Not carcinogenic
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 mg/kg/day	during gestation
Polyethylene Glycol	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,125 mg/kg/day	during gestation
Polyethylene Glycol	Ingestion	Not toxic to male reproduction	Rat	NOAEL 5699 +/- 1341 mg/kg/day	5 days
Polyethylene Glycol	Not Specified	Some positive reproductive/developmental data exist, but the data are not sufficient for classification		NOEL N/A	
Polyethylene Glycol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 562 mg/animal/day	during gestation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Not toxic to female reproduction	Rat	NOAEL 10 mg/kg/day	2 generation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Not toxic to male reproduction	Rat	NOAEL 10 mg/kg/day	2 generation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Not toxic to development	Rat	NOAEL 15 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Polyethylene Glycol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.008 mg/l	2 weeks
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
Sodium Silicate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	blood	All data are negative	Rat	NOAEL 804	3 months

					mg/kg/day	
Sodium Silicate	Ingestion	heart liver	All data are negative	Rat	NOAEL 1,259 mg/kg/day	8 weeks
Iron oxide	Inhalation	pulmonary fibrosis pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Polyethylene Glycol	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.008 mg/l	2 weeks
Polyethylene Glycol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,640 mg/kg/day	13 weeks
Polyethylene Glycol	Ingestion	heart endocrine system hematopoietic system liver nervous system	All data are negative	Rat	NOAEL 5,640 mg/kg/day	13 weeks
Oxide glass chemicals	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL not available	occupational exposure

Aspiration Hazard

Name	Value

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Test Organism	Test Type	Result
Water flea, Daphnia magna	48 hours Aquatic Toxicity - Acute	27 mg/l
Green algae, Pseudokirchneriella subcapitata	72 hours Aquatic Toxicity - Chronic	2.6 mg/l

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Zinc Borate 2335 (ZINC COMPOUNDS)	138265-88-0	10 - 30

15.2. State Regulations

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

15.4. International Regulations

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Safety Data Sheet

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Document Group:	19-9776-6	Version Number:	8.00
Issue Date:	08/13/14	Supersedes Date:	08/13/14

SECTION 1: Identification

1.1. Product identifier

3M FireBarrier™ Sealant IC 15 WB+

Product Identification Numbers

42-0016-4768-6, 42-0016-4769-4, 42-0016-4770-2, 98-0400-5509-1, 98-0400-5510-9, 98-0400-5511-7, 98-0400-5512-5, 98-0400-5630-5

1.2. Recommended use and restrictions on use

Recommended use

Fire Barrier Sealant.

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Carcinogenicity: Category 1A.

2.2. Label elements

Signal word

Danger

Symbols

Health Hazard |

Pictograms

**Hazard Statements**

Causes eye irritation.
May cause cancer.

Precautionary Statements**General:**

Keep out of reach of children.

Prevention:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves.
Wash thoroughly after handling.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Calcium Carbonate	1317-65-3	30 - 60 Trade Secret *
Water	7732-18-5	10 - 30 Trade Secret *
Polymer NJTS Reg. No. 04499600-7314	Trade Secret*	10 - 30 Trade Secret *
Sodium Silicate	1344-09-8	3 - 7 Trade Secret *
Zinc Borate 2335	138265-88-0	3 - 7 Trade Secret *
Fiberglass	65997-17-3	0.5 - 1.5 Trade Secret *
Quartz Silica	14808-60-7	< 0.5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Calcium Carbonate	1317-65-3	OSHA	TWA(as total dust):15 mg/m ³ ;TWA(respirable fraction):5 mg/m ³	
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m ³	A2: Suspected human carcin.
Quartz Silica	14808-60-7	OSHA	TWA concentration(as total dust):0.3 mg/m ³ ;TWA concentration(respirable):0.1 mg/m ³ (2.4 millions of particles/cu. ft.)	
Fiberglass	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m ³	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls**8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)**Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Paste
Odor, Color, Grade:	Light yellow viscous paste with a mild odor
Odor threshold	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	Flash point > 93 °C (200 °F)
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Specific Gravity	1.4 [<i>Ref Std: WATER=1</i>]
Solubility in Water	Moderate
Solubility- non-water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Volatile Organic Compounds	< 2 g/l
VOC Less H2O & Exempt Solvents	< 2 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient	C.A.S. No.	Class Description	Regulation
Generic: GLASS FILAMENTS	65997-17-3	Anticipated human carcinogen	National Toxicology Program Carcinogens
Generic: GLASS FILAMENTS	65997-17-3	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Quartz Silica	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
SILICA, CRYST AIRRESP	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Calcium Carbonate	Dermal	Rat	LD50 > 2,000 mg/kg
Calcium Carbonate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3.0 mg/l
Calcium Carbonate	Ingestion	Rat	LD50 6,450 mg/kg
Polymer NJTS Reg. No. 04499600-7314	Ingestion	Rat	LD50 > 2,000 mg/kg
Zinc Borate 2335	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate 2335	Ingestion	Rat	LD50 > 10,000 mg/kg
Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Fiberglass	Dermal		LD50 estimated to be > 5,000 mg/kg
Fiberglass	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Quartz Silica	Dermal		LD50 estimated to be > 5,000 mg/kg

Quartz Silica	Ingestion	LD50 estimated to be > 5,000 mg/kg
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ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Polymer NJTS Reg. No. 04499600-7314	Rabbit	Minimal irritation
Sodium Silicate	Rabbit	Corrosive
Fiberglass		No significant irritation
Quartz Silica		No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Polymer NJTS Reg. No. 04499600-7314		Mild irritant
Sodium Silicate	Rabbit	Corrosive
Fiberglass		No significant irritation

Skin Sensitization

Name	Species	Value
Sodium Silicate	Mouse	Not sensitizing

Respiratory Sensitization

Name	Species	Value
------	---------	-------

Germ Cell Mutagenicity

Name	Route	Value
Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Fiberglass	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Fiberglass	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Ingestion	Not toxic to development	Rat	NOAEL 625 mg/kg/day	pre mating & during gestation
Sodium Silicate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 mg/kg/day	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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Calcium Carbonate	Inhalation	respiratory system	All data are negative	Rat	NOAEL 0.812 mg/l	90 minutes
Sodium Silicate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Sodium Silicate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
Sodium Silicate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	blood	All data are negative	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	heart liver	All data are negative	Rat	NOAEL 1,259 mg/kg/day	8 weeks
Fiberglass	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL not available	occupational exposure
Quartz Silica	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

Name	Value
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Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Zinc Borate 2335 (ZINC COMPOUNDS)	138265-88-0	3 - 7

15.2. State Regulations

Contact 3M for more information.

California Proposition 65

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	None	Carcinogen
GLASS FILAMENTS	None	Carcinogen
ACETALDEHYDE	75-07-0	Carcinogen

WARNING: This product contains a chemical known to the State of California to cause cancer.

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

This product complies with the New Zealand Hazardous Substances and New Organisms Act (1996).

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

SpecSeal® Composite Sheet

TRADE/MATERIAL NAME: Wood Fiber, Graphite and Metal Construction
 CHEMICAL NAMES: None
 SYNONYMS: Sealant
 RELEVANT USE of the SUBSTANCE: Other than Relevant Use
 USES ADVISED AGAINST:
 SUPPLIER/MANUFACTURER'S NAME (USA/Canada): **Specified Technologies, Inc.**
 Address: 210 Evans Way,
 Somerville, New Jersey 08876
 Business Phone: (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
 Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
 International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

This product is defined as an "Article" under the U.S. Federal OSHA Hazard Communication Standard (29 CFR 1910.1200), EU Directives, and the Canadian Workplace Hazardous Materials Standard. Refer to Section 15 (Regulatory Information) for specific regulatory citations. As articles, this product presents negligible health and physical hazards under reasonably anticipated circumstances of use. Subsequently, a Material Safety Data Sheet is not required under Standards cited above. This document is prepared to provide persons using this product with additional safety information.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

EMERGENCY OVERVIEW: Product Description: This product an article, which consists of a rigid panel with an intumescent latex layer bonded to reinforced with wire mesh and covered with a layer of aluminum foil. When the latex layer is heated it expands up to 15 times to form a sealant barrier, fire-resistant barrier. **Health Hazards:** No ingredient is water soluble and presents no contact hazard, except for possible cuts and abrasions. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume may also cause irritation. **Flammability Hazards:** This product is designed to be fire-retardant; however if exposed to direct flame for a prolonged period, the wooden portion of the product may ignite. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., aluminum, carbon and nitrogen oxides, hydrocarbons, methanol, acetone, acetic acid, polyenes, polyenols/unsaturated oligomers, low molecular weight hydrocarbons such as ethylene, small organic aldehydes, acrolein and monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Due the form of the product, this product will persist for some time if improperly disposed in the environment. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Graphite	7782-42-5	Listed	Excepted as Mineral	KE-18101		Proprietary	Classification Not Applicable
Wood Fiber	65996-61-4	Listed	Not Identified in the Listing	KE-29911		Proprietary	Classification Not Applicable
Aluminum Foil	7429-90-5	Listed	Excepted as Mineral	KE-00881		Proprietary	Classification Not Applicable
Galvanized Sheet Metal	Not Applicable	Not Applicable	Not Applicable	Not Applicable		Proprietary	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Wire Mesh	Not Applicable	Not Applicable	Not Applicable	Not Applicable		Proprietary	Classification Not Applicable
Latex Emulsion	Mixture	Mixture	Mixture	Mixture		Proprietary	Classification Not Applicable
Potions of this product contain the following:							
Graphite	7782-42-8	Listed	Excepted as Mineral	KE-18101		40-50	Classification Not Applicable
Polyvinyl Alcohol	9002-89-5	Listed	6-682	KE-29060		1-3	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Flammable Solid Cat. 2, Acute Oral Toxicity Cat. 5 Hazard Codes: H228, H303 GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Flammable Solid Cat. 2 Hazard Codes: H228
Water and Other Trace Ingredients						Balance	Classification Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual. Wash clothing and thoroughly clean shoes before reuse.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If heated and fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this particles from this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: Due to the form of the product, ingestion is unlikely.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

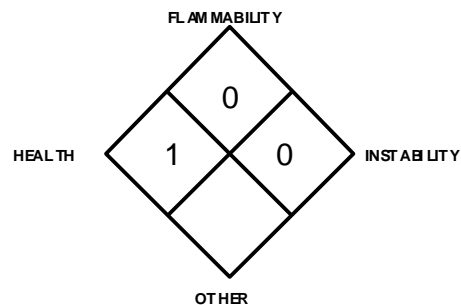
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., aluminum, carbon and nitrogen oxides, hydrocarbons, methanol, acetone, acetic acid, polyenes, polyenols/unsaturated oligomers, low molecular weight hydrocarbons such as ethylene, small organic aldehydes, acrolein and monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: If this product is contaminated by chemical products, this situation should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small and Large Spills: Wear sturdy gloves to protect against cuts, eye protection, and appropriate body protection. Steel-toed boots are recommended to protect against injury to feet.

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small and Large Spills: This product can be picked-up and should be disposed of properly if the product cannot be reclaimed. .

All Spills: Place all residue in appropriate containment and seal. Take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: If during the use of this product, dusts, particulates or fumes are generated, avoid breathing, or skin or eye contact. Avoid touching heated product. Wash hands thoroughly after handling this product or containers of this product.

CONDITIONS FOR SAFE STORAGE: Store this product in a cool, dry location, away from sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity), water, heat and flame.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Aluminum Exposure limits given are for Aluminum metal	7429-90-5	1 (resp. fract.)	NE	15 (total dust), 5 (resp. fract.)	NE	10 (total dust), 5 (resp. fract.)	NE	NE	DFG MAK: TWA = 4 (inhalable fraction), 1.5 (resp. fraction) DFG MAK Pregnancy Risk Classification: D
Galvanized Metal	Mixture	NE	NE	NE	NE	NE	NE	NE	NE
Graphite	7782-42-5	2 (resp. fract.)	NE	15 mppcf (based on impinger samples counted by light field techniques)	NE	2.5 (resp. dust)	NE	NE	DFG MAK: TWA = 1.5 (respirable fraction); 4 (inhalable fraction) DFG MAK Pregnancy Risk Classification: C
Proprietary Latex Emulsion		NE	NE	NE	NE	NE	NE	NE	NE
Polyvinyl Alcohol	9002-89-5	NE	NE	NE	NE	NE	NE	NE	Carcinogen: IARC-3
Wood Fiber	65996-61-4	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM:

Australia: TWA = 10 mg/m³ (metal dust), JUL 2008
 Australia: TWA = 2 mg(Al)/m³, JUL 2008
 Australia: TWA = 5 mg/m³ (pyro powders), JUL 2008
 Australia: TWA = 5 mg/m³ (welding fumes), JUL 2008
 Austria: TMW = 10 mg/m³; KZW = 20 mg/m³, inhal, 2007
 Belgium: TWA = 10 mg/m³, MAR2002
 Belgium: TWA = 5 mg/m³ (pyro powders), MAR 2002
 Belgium: TWA = 5 mg/m³ (welding fumes), MAR 2002
 Denmark: TWA = 5 mg/m³, MAY 2011
 Finland: TWA = 1.5 mg/m³ (welding fumes), NOV 2011
 France: VME = 10 mg/m³, 5 mg/m³ (fume, resp. dust), FEB 2006
 Germany: MAK = 1.5 mg/m³ (respirable), 2005
 Hungary: TWA = 6 mg/m³ (resp), SEP 2000
 Iceland: TWA = 10 mg/m³, STEL = 5 mg/m³, dust, NOV 2011
 Japan: OEL = 0.5 mg/m³ (resp. dust), 2 mg/m³ (total dust), MAY 2009
 Korea: TWA = 10 mg/m³ (metal dust), 2006
 Korea: TWA = 5 mg/m³ (pyro powders), 2006
 Korea: TWA = 5 mg/m³ (welding fumes), 2006
 Mexico: TWA = 10 mg/m³; STEL = 20 mg/m³, 2004
 Mexico: TWA = 5 mg(Al)/m³, 2004
 Mexico: TWA = 5 mg(Al)/m³ (pyro powders), 2004
 The Netherlands: MAC-TGG = 10 mg/m³, 2003
 New Zealand: TWA = 10 ppm (metal dust), JAN 2002
 New Zealand: TWA = 5 ppm (fumes), JAN 2002
 New Zealand: TWA = 5 ppm (pyro powders), JAN 2002

ALUMINUM (continued):

Norway: TWA = 5 mg/m³, JAN 1999
 Peru: TWA = 10 mg/m³, JUL 2005
 Russia: STEL = 2 mg/m³, JUN 2003
 Sweden: TWA = 5 mg/m³ (total dust); TWA = 2 mg/m³ (resp. dust), JUN 2005
 Switzerland: MAK-W = 3 mg/m³, DEC 2006
 United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
 United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT 2007
 In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV
GRAPHITE:
 Belgium: TWA = 2 mg/m³ (resp. dust), MAR 2002
 Denmark: TWA = 2.5 mg/m³ (respirable), MAY 2011
 Finland: TWA = 2 mg/m³, NOV 2011
 France: VME = 2 mg/m³, FEB 2006
 Germany: MAK = 1.5 mg/m³, resp, 2011
 Germany: MAK = 4 mg/m³, inhal, 2011
 Iceland: TWA = 2.5 mg/m³ (resp. dust), NOV 2011
 Japan: OEL = 0.5 mg/m³ (respirable), 2 mg/m³ (total), MAY 2012
 Korea: TWA = 10 mg/m³, 2006
 Korea: TWA = 2.5 mg/m³, 2006
 Mexico: TWA = 2 mg/m³, 2004
 The Netherlands: MAC-TGG = 2 mg/m³, 2003
 New Zealand: TWA = 3 mg/m³ (respirable dust), JAN 2002
 Peru: TWA = 2 mg/m³, JUL 2005
 Sweden: TWA = 0.2 f/cc, JUN 2005
 Sweden: TWA = 5 mg/m³, JUN 2005

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

International Occupational Exposure Limits (continued):

GRAPHITE (continued):

Switzerland: MAK-W = 5 mg/m³, inhal, JAN 2011
Switzerland: MAK-W = 2.5 mg/m³, resp, JAN 2011

GRAPHITE (continued):

In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

POLYVINYL ALCOHOL:

Russia: STEL = 10 mg/m³, JUN 2003

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Due to the form of this product, respiratory protection is not normally required. If heated and fumes are generated, maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., coveralls, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Multiple-layered rigid panel.

MOLECULAR FORMULA: Mixture.

ODOR: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not available.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not applicable.

VAPOR PRESSURE: Not applicable.

VAPOR DENSITY (air = 1): Not applicable.

EVAPORATION RATE (n-BuAc = 1): Not applicable.

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

COLOR: Multiple colors.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 0

FLASH POINT: Not available.

BOILING POINT: Not applicable.

SPECIFIC GRAVITY (water = 1): Not applicable.

CARB VOC: Not applicable.

SCAQMD (U.S. EPA Method 24): Not applicable.

SOLUBILITY IN SOLVENTS: Not applicable.

pH: Not applicable.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, carbon and nitrogen oxides, hydrocarbons, methanol, acetone, acetic acid, polyenes, polyenols/unsaturated oligomers, low molecular weight hydrocarbons such as ethylene, small organic aldehydes, acrolein and monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: If this product is heated, inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms.

Contact with Skin or Eyes: Due to the form of the product, contact with the eyes is unlikely, unless heating causes fumes or particulates are generated. Particulates may cause mechanical irritation; fumes may cause tearing and stinging. Mishandling of the product may cause abrasions or cuts.

11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a likely route of exposure, due to the form of the product.

Injection: Injection is not likely, due to the form of the product.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system.

Eye contact may cause mechanical irritation.

Chronic: None known.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: None.

TOXICITY DATA: No toxicity data are presented for components due to product form.

CARCINOGENICITY: Due to the physical nature of this product, carcinogenicity is not a hazard.



SENSITIZATION OF PRODUCT: This product is not currently known to cause allergic skin or respiratory reaction.

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Skin contact may cause abrasion.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD	(BLUE)	1	
FLAMMABILITY HAZARD	(RED)	0	
PHYSICAL HAZARD	(YELLOW)	0	
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: As an article, this product will not be mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: The metal portions of this product will persist indefinitely.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: The components of this product are not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

14. TRANSPORTATION INFORMATION (Continued)

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: As an article, this product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: No; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): As an article, this product is not subject to Threshold Planning Quantities, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 lists.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: As an article, this product is not subject the Controlled Product Regulations.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: As an article, this product is not subjected to requirements under the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS: As an article, this product is not subjected to requirements under ENCS Inventory.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: As an article, this product is not subjected to requirements under the Japanese METI.

Poisonous and Deleterious Substances Control Law: As an article, this product is not subjected to requirements under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: As an article, this product is not subjected to requirements under the Korean ECL Inventory.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is not classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: As an article, this product is not subjected to requirements under the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: As an article, this product is not subjected to requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: As an article, this product is not subjected to requirements under the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** PARTICULATES OR FUMES GENERATED BY HEATING OR MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. PARTICLES FROM PRODUCT MAY CAUSE MECHANICAL IRRITATION. Avoid breathing fumes or vapors. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of contact and adverse effect occurs, flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Pick-up waste product and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

16. OTHER INFORMATION (Continued)

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

DATE OF PRINTING: May 29, 2015

REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: **1:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible). **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. *Eye Irritation:* Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. *Oral Toxicity LD₅₀ Rat > 5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 2000 mg/kg. Inhalation Toxicity 4-hrs LC₅₀ Rat > 20 mg/L. 1 Slight Hazard:* Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. *Skin Irritation:* Slightly or mildly irritating, PII or Draize > 0 < 5. *Eye Irritation:* Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. *Oral Toxicity LD₅₀ Rat > 500-5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 1000-2000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat > 2-20 mg/L. 2 Moderate Hazard:* Temporary or transitory injury may occur; prolonged exposure may affect the CNS. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. *Eye Irritation:* Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize = 26-100, with reversible effects. *Oral Toxicity LD₅₀ Rat > 50-500 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 200-1000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat > 0.5-2 mg/L. 3 Serious Hazard:* Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5-8, with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD₅₀ Rat > 1-50 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 20-200 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat > 0.05-0.5 mg/L. 4 Severe Hazard:* Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. *Skin Irritation:* Not appropriate. Do not rate as a 4, based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a 4, based on eye irritation alone. *Oral Toxicity LD₅₀ Rat ≤ 1 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit ≤ 20 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat ≤ 0.05 mg/L.*

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; **3 (continued):** Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No 0 rating. *Unstable Reactives:* Substances that will not polymerize, decompose, condense, or self-react. **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. *Explosives:* Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Reactive:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability 4. *Oxidizers:* No 4 rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids). Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): . 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀, or TC, TCo, LCLo, and LCo:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** **IARC:** International Agency for Research on Cancer. **NTP:** National Toxicology Program. **RTECS:** Registry of Toxic Effects of Chemical Substances. **IARC and NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI:** American Conference of Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TLM:** Median threshold limit. **log K_{ow}** or **log K_{oc}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **IC:** Transport Canada. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

SpecSeal® Series ES Sealant

TRADE/MATERIAL NAME: Acrylic Polymer Mixture
CHEMICAL NAMES: None
SYNONYMS: Sealant
RELEVANT USE of the SUBSTANCE: Other than Relevant Use
USES ADVISED AGAINST:
SUPPLIER/MANUFACTURER'S NAME (USA/Canada): Specified Technologies, Inc.
Address: 210 Evans Way,
Somerville, New Jersey 08876
Business Phone: (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, Aquatic Acute Toxicity Cat. 3, Aquatic Chronic Toxicity Cat. 3

Signal Word: Warning

Hazard Statement Codes: H351, H319, H335, H412

Precautionary Statement Codes: P201, P202, P261, P271, P273, P280, P308 + P313, P305 + P351 + P338, P337 + P313, P304 + P340, P312, P321, P403 + P233 + P405, P501

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

EMERGENCY OVERVIEW: Product Description: This product is a blue paste with a mild ammonia odor. **Health Hazards:** May be harmful if accidentally ingested. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume may also cause irritation. Brief skin contact is not expected to cause adverse effect. Prolonged skin contact may cause irritation. This product contains a known human carcinogen and a suspect carcinogen by inhalation; however, this hazard is not expected to be significant due to viscosity of the product. **Flammability Hazards:** This product is formulated to be non-flammable and non-combustible. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., calcium, carbon, magnesium and titanium oxides, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** This product has not been tested for potential hazards if released to the environment; however the Proprietary Benzoate Esters component may cause acute and chronic harm to aquatic organisms. All release should be avoided. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Ground Limestone	1317-65-3	Listed	Excepted as Mineral	KE-21996		40-50%	Classification Not Applicable
Proprietary Acrylic Polymer	Not Available	Not Determined	Not Determined	Not Determined	Not Determined	30-40%	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Benzoate Esters	Not Available	Not Determined	Not Determined	Not Determined	Not Determined	2-6%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Acute Dermal Toxicity Cat. 5, Acute Inhalation Toxicity Cat. 5, Aquatic Acute Toxicity Cat. 2, Aquatic Chronic Toxicity Cat. 2 Hazard Codes: H313, H333, H401, H411
Propylene Glycol	57-55-6	Listed	2-234	KE-29267		1-2%	Classification Not Applicable
Titanium Dioxide	13463-67-7	Listed	1-558	KE-33390		0.05-0.3%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2 Hazard Codes: H351i
Crystalline Silica	14808-60-7	Listed	1-548	KE-29983		0.5-0.9%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2 Hazard Statement Codes: H350, H373
Water and Other Trace Ingredients						Balance	Classification Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 302 °C (576 °F)

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., calcium, carbon, magnesium and titanium oxides, and acrylic monomers).

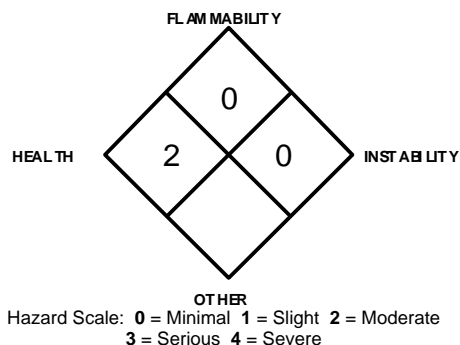
Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear

Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

6. ACCIDENTAL RELEASE MEASURES (Continued)

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polypads.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Containers should be grounded and separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and “NO SMOKING” signs in storage and use areas as appropriate. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Do not store above 55°C (131°F)

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Crystalline Silica (Quartz)	14808-60-7	0.025 (resp. fract.)	NE	30 mg/m ³ (total dust) % SO ₂ + 2 0.1 (vacated 1989 PEL) 250 mppcf (resp. dust) % SiO ₂ + 5 or 10 mg/m ³ (resp. dust) % SO ₂ + 2		0.05 (resp. dust)	NE	50	Carcinogen: IARC-1, MAK-1 (respirable fraction), NOSH-Ca, NTP-K (respirable fraction), TLV-A2
Ground Limestone	1317-65-3	NE	NE	15 (total dust); 1 (resp. fract.)	NE	10 (total dust); 1 (resp. fract.)	NE	NE	NE
Proprietary Acrylic Polymer		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Benzoate Esters		NE	NE	NE	NE	NE	NE	NE	NE
Propylene Glycol	57-55-6	NE	NE	NE	NE	NE	NE	NE	AIHA WEEL: TWA = 10
Titanium Dioxide	13463-67-7	10	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000 (Ca)	Carcinogen: IARC-2B, MAK-3A, NIOSH-Ca; TLV-A3

NE = Not Established. See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

CRYSTALLINE SILICA:

Australia: TWA = 0.1 mg/m³, JUL 2008
Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
France: VME = 0.1 mg/m³, (resp), FEB 2006
Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
Korea: TWA = 0.1 mg/m³, 2006
Mexico: TWA = 0.1 mg/m³ (respirable), 2004
The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002
Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
Peru: TWA = 0.05 mg/m³, JUL 2005
Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

GROUND LIMESTONE:

Belgium: TWA = 10 mg/m³, MAR 2002
Hungary: TWA = 10 mg/m³, SEP 2000
Japan: OEL = 2 mg/m³ (resp. dust), 84 mg/m³ (total dust), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³, STEL = 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Poland: MAC(TWA) dust = 10 mg/m³, JAN 1999
Russia: STEL = 6 mg/m³, JUN 2003
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011

GROUND LIMESTONE (continued):

United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (respirable dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV
PROPYLENE GLYCOL:
Australia: TWA = 10 mg/m³ (particulates), JUL 2008
Australia: TWA = 150 ppm (474 mg/m³) (total), JUL 2008
New Zealand: TWA = 10 mg/m³ (particulates only), JAN 2002
New Zealand: TWA = 150 ppm (474 mg/m³) (vapor and particulates), JAN 2002
Russia: STEL = 7 mg/m³, JUN 2003
United Kingdom: TWA = 10 mg/m³ (particulate), OCT 2007
United Kingdom: TWA = 150 ppm (474 mg/m³) (total vapor and particulate), OCT 2007

TITANIUM DIOXIDE:

ARAB Republic of Egypt: TWA = 15 mg/m³, JAN 1993
Austria: MAK-TMW = 5 mg/m³, KZW = 10 mg/m³, resp, 2007
Belgium: TWA = 10 mg/m³, MAR 2002
Denmark: TWA = 6 mg(Ti)/m³, MAY 2011
France: VME = 10 mg/m³, FEB 2006
Germany: MAK = 1.5 mg/m³ (respirable), 2005
Iceland: TWA = 6 mg(Ti)/m³, NOV 2011
Japan: OEL = 1 mg/m³ (resp. dust), 4 mg/m³ (total dust), MAY 2009
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg(Ti)/m³, STEL = 20 mg(Ti)/m³, 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Norway: TWA = 5 mg/m³, JAN 1999
Peru: TWA = 10 mg/m³, JUL 2005
Poland: MAC(TWA) = 10 mg(Ti)/m³, MAC(STEL) = 30 mg(Ti)/m³, JAN 1999
Russia: TWA = 10 mg/m³, JUN 2003
Sweden: TWA = 5 mg/m³ (total dust), JUN 2005
Switzerland: MAK-W = 3 mg/m³, DEC 2006
Turkey: TWA = 15 mg/m³, JAN 1993
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste.

MOLECULAR FORMULA: Mixture.

ODOR: Mild acrylic.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not available.

VAPOR DENSITY (air = 1): Not available.

EVAPORATION RATE (n-BuAc = 1): > 1

SOLUBILITY IN WATER: Dissolves when wet; insoluble when cured.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

COLOR: Blue.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 17-20

FLASH POINT: Not available.

BOILING POINT: 100-105°C (212-221°F)

SPECIFIC GRAVITY (water = 1): 1.2-20 gm/L

CARB VOC: 3.04 wt % (calc.)

SCAQMD (U.S. EPA Method 24): 44 gm/L

SOLUBILITY IN SOLVENTS: Not available.

pH: Not available.

9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., calcium, carbon, magnesium and titanium oxides, and acrylic monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. The Crystalline Silica component is a known human carcinogen and Titanium Dioxide, as suspect carcinogen by inhalation. Due to the form of this product, this hazard is not as significant as a powdered or solid products; however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin).

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system. Eye contact may cause mechanical irritation.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin). This product contains Crystalline Silica, a known human carcinogen.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration. Due to the large amount of data available for the Propylene Glycol, Titanium Dioxide and Crystalline Silica components, only human data, LD50 Oral Rat and Mouse, LD50 Skin Rabbit and Rat, LC50 Inhalation Rat and Mouse, carcinogenic and mutation data are provided. Contact STI for information on additional data for these components.

GROUND LIMESTONE:

TDLo (Intravenous-Rat) 30 mg/kg: Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: changes in lung weight; Blood: other changes

TCLo (Inhalation-Rat) 84 mg/m³/4 hours/40 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial); Liver: other changes; Kidney/Ureter/Bladder: other changes

TCLo (Inhalation-Rat) 250 mg/m³/2 hours/24 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis)

PROPRIETARY BENZOATE ESTERS:

LD₅₀ (Skin-Rat) > 2000 mg/kg

LC₅₀ (Inhalation-Rat) 4 hours = > 220 mg/L

PROPYLENE GLYCOL:

Standard Draize Test (Skin-Human) 500 mg/7 days: Mild

Standard Draize Test (Skin-Human) 104 mg/3 days-intermittent: Moderate

Standard Draize Test (Skin-Man) 10%/2 days

Standard Draize Test (Skin-Child) 30%/96 hours-continuous: Moderate

Open Irritation Test (Skin-woman) 30%/96 hours: Mild

TDLo (Oral-Child) 79 gm/kg/56 weeks-intermittent: Brain and Coverings: changes in surface EEG; Behavioral: general anesthetic, convulsions or effect on seizure threshold

TDLo (Skin-Human) 10 pph: Skin and Appendages: dermatitis, allergic (after topical exposure)

TDLo (Parenteral-Infant) 10 gm/kg/3 days-continuous: Nutritional and Gross Metabolic: other changes

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Prolonged skin contact may cause irritation.



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

PROPYLENE GLYCOL (continued):

TDLo (Skin-Human) 5 mg/kg/7 days-intermittent: Skin and Appendages: primary irritation (after topical exposure)

TDLo (Skin-Human) 4.5 mg/kg/3 days-intermittent: Skin and Appendages: primary irritation (after topical exposure)

TDLo (Skin-Human) 10 pph/48 hours-continuous: Skin and Appendages: dermatitis, allergic (after topical exposure)

TDLo (Skin-Man) 0.03 mL/kg/22 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

TDLo (Intravenous-Woman) 5167 mg/kg/13 days-continuous: Nutritional and Gross Metabolic: metabolic acidosis

Standard Draize Test (Eye-Rabbit) 100 mg: Mild

Standard Draize Test (Eye-Rabbit) 500 mg/24 hours: Mild

LD₅₀ (Oral-Rat) 20 gm/kg

LD₅₀ (Oral-Mouse) 22 gm/kg

LD₅₀ (Oral-Mouse) 20,300 mg/kg: Behavioral: ataxia, tetany; Lungs, Thorax, or Respiration: respiratory depression

LD₅₀ (Skin-Rabbit) 20,800 mg/kg

LD₅₀ (Skin-Rabbit) 20,800 mg/kg: Behavioral: ataxia, tetany; Lungs, Thorax, or Respiration: respiratory depression

DNA Inhibition (Subcutaneous-Mouse) 8000 mg/kg

Cytogenetic Analysis (Subcutaneous-Mouse) 8000 mg/kg

Cytogenetic Analysis (Hamster Fibroblast) 32 gm/L

11. TOXICOLOGICAL INFORMATION (Continued)

SENSITIZATION OF PRODUCT: This product is not currently known to cause allergic skin or respiratory reaction.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CRYSTALLINE SILICA: ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen)

TITANIUM DIOXIDE: ACGIH TLV-A3 (Confirmed Animal Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided. The following aquatic toxicity data are available for the Proprietary Benzoate Esters component.

PROPRIETARY BENZOATE ESTERS:

EC₅₀ (Daphnid) 19.3 mg/L

PROPRIETARY BENZOATE ESTERS (continued):

EC₅₀ (Algae) 72 hours = 4.9 mg/L

LC₅₀ (Fish) 96 hours = 3.7 mg/L

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Crystalline Silica component is on the California Proposition 65 lists. **WARNING!** This product contains a compound known to the State of California to cause Cancer.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. PROLONGED SKIN CONTACT MAY CAUSE IRRITATION. CONTAINS CRYSTALLINE SILICA, A KNOWN HUMAN CARCINOGEN BY INHALATION AND OTHER COMPONENTS THAT ARE SUSPECT CARCINOGENS BY INHALATION. CONTAINS COMPOUND THAT CAN CAUSE ACUTE AND CHRONIC HARM TO AQUATIC ORGANISMS. Avoid breathing fumes or vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P261: Avoid breathing vapors, fume. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, clothing, eye protection and face protection. P284: Wear respiratory protection.

16. OTHER INFORMATION (Continued)

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION (continued):

Precautionary Statements (continued):

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-

68. Under ISHA, no differences in classification are applicable.

COMPONENT CLASSIFICATION:

Labeling and Classification Full Text under GHS:

Crystalline Silica: This is a self-classification.

Classification: Carcinogenic Category 1, Specific Target Organ Toxicity (Inhalation-Lungs) Repeated Exposure Category 2

Hazard Statements: H350: May cause cancer. H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

Proprietary Benzoate Esters: This is a self-classification.

Classification: Acute Dermal Toxicity Category 5, Acute Inhalation Toxicity Category 5, Aquatic Acute Toxicity Category 2, Aquatic Chronic Toxicity Category 2

Hazard Statements: H313: May be harmful in contact with skin. H333: May be harmful if inhaled. H401: Toxic to aquatic life. H411: Toxic to aquatic life with long-lasting effects.

Titanium Dioxide: This is a self-classification.

Classification: Carcinogenic Category 2

Hazard Statements: H350i: May cause cancer by inhalation.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

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DATE OF PRINTING: May 29, 2015

REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOG: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

EXPOSURE LIMITS IN AIR (continued):

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. **3 Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres;

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

3 (continued): Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides).

4 Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react. **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. **Unstable Reactives:** Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. **Organic Peroxides:** Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 3 Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

DEFINITION OF TERMS (Continued)

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. LD₅₀: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC₅₀: Lethal Concentration (gases) that kills 50% of the exposed animals. ppm: Concentration expressed in parts of material per million parts of air or water. mg/m³: Concentration expressed in weight of substance per volume of air. mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. TDLo: Lowest dose to cause a symptom. TCLo: Lowest concentration to cause a symptom. TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo: Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLm: Median threshold limit. log K_{OW} or log K_{OC}: Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. IC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME:

**EZ-Path® Series 22 Pathway; EZ-Path® Series 33 Pathway
EZ-Path® Series 44+ Pathway**

CHEMICAL NAMES:

Rubber Mixture

SYNONYMS:

None

RELEVANT USE of the SUBSTANCE:

Sealant

USES ADVISED AGAINST:

Other than Relevant Use

SUPPLIER/MANUFACTURER'S NAME (USA/Canada): **Specified Technologies, Inc.**

Address:

210 Evans Way,
Somerville, New Jersey 08876

Business Phone:

(908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)

Emergency Phone:

U.S., Canada: 1-800-255-3924 (24 hrs)

International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS:

techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

This product is defined as an "Article" under the U.S. Federal OSHA Hazard Communication Standard (29 CFR 1910.1200), EU Directives, and the Canadian Workplace Hazardous Materials Standard. Refer to Section 15 (Regulatory Information) for specific regulatory citations. As articles, this product presents negligible health and physical hazards under reasonably anticipated circumstances of use. Subsequently, a Material Safety Data Sheet is not required under Standards cited above. This document is prepared to provide persons using this product with additional safety information.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

EMERGENCY OVERVIEW: Product Description: This product an article, which consists of a galvanized steel form lined with a black rubber solid. **Health Hazards:** This product is an article and presents no contact hazard under normal conditions of handling. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation and possible respiratory sensitization. Eye contact with vapors or fume may also cause irritation. **Flammability Hazards:** This product is designed to be fire-retardant; however if exposed to direct flame for a prolonged period, the product may ignite. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., carbon, nitrogen and metal oxides, phthalates, ammonia, formaldehyde, hydrogen cyanide, nitriles, isocyanates, nitrosamines, hydrogen chloride, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Although the product contains materials that may cause acute and or chronic toxicity to aquatic organisms, due to its form, this product is not expected to cause toxic effects to aquatic organisms. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Ingredients of Rubber Solid							
1,3-Butadiene Homopolymer, Hydroxy Terminated	69102-90-5	Listed	6-722, 6-757	KE-03730		25-30	Classification Not Applicable
Diundecyl Phthalate	3648-20-2	Listed	3-1307	KE-02299		20-30	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Reproductive Toxicity Cat. 2, Eye Irritation Cat. 2B, Aquatic Acute Cat. 1, Aquatic Chronic Cat. 3 Hazard Codes: H361d, H320, H410, H412

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Graphite	7782-42-5	Listed	Excepted as Mineral	KE-18101		20-30	Classification Not Applicable
Methylene Bisphenyl Isocyanate	101-68-8	Listed	1-561	KE-35565		2-5	PUBLISHED CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2, Acute Inhalation Toxicity Cat. 4, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Skin Sensitization Cat. 1B, Respiratory Sensitization Cat. 1B, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, STOT RE Cat. 2 Hazard Codes: H351, H332, H315, H317, H319, H334, H335, H373
Bis(2-hydroxy-3-tert-butyl-5-methylphenyl) methane	119-47-1	Listed	4-100	KE-23821		1-3	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Reproductive Toxicity Cat. 2, Eye Irritation Cat. 2B, Aquatic Chronic Cat. 3 Hazard Codes: H361f, H320, H413
Other Trace Ingredients						Balance	Classification Not Applicable
Galvanized Steel	Mixture	Mixture	Mixture	Mixture		Proprietary	Classification Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual. Wash clothing and thoroughly clean shoes before reuse.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If heated and fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this particles from this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: Due to the form of the product, ingestion is unlikely.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

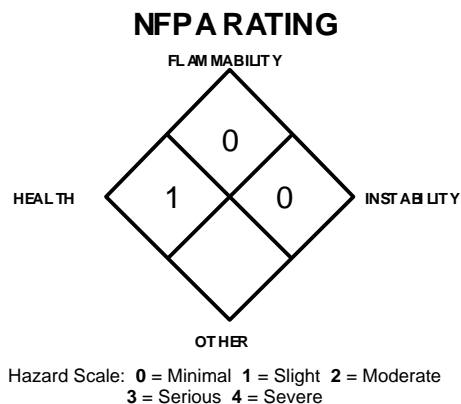
UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, nitrogen and metal oxides, phthalates, ammonia, formaldehyde, hydrogen cyanide, nitriles, isocyanates, nitrosamines, hydrogen chloride, and acrylic monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: If this product is contaminated by chemical products, this situation should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small and Large Spills: Wear sturdy gloves to protect against cuts, eye protection, and appropriate body protection. Steel-toed boots are recommended to protect against injury to feet.

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small and Large Spills: This product can be picked-up and should be disposed of properly if the product cannot be reclaimed. .

All Spills: Place all residue in appropriate containment and seal. Take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: If during the use of this product, dusts, particulates or fumes are generated, avoid breathing, or skin or eye contact. Avoid touching heated product. Wash hands thoroughly after handling this product or containers of this product.

CONDITIONS FOR SAFE STORAGE: Store this product in a cool, dry location, away from sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity), water, heat and flame.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Acrylonitrile Methacrylonitrile Methyl Methacrylate Polymer	38742-70-0	NE	NE	NE	NE	NE	NE	NE	NE
Bis(2-hydroxy-3-tert-butyl-5-methylphenyl) methane	119-47-1	NE	NE	NE	NE	NE	NE	NE	NE
1,3-Butadiene Homopolymer Hydroxy Terminated	69102-90-5	NE	NE	NE	NE	NE	NE	NE	NE
Diundecyl Phthalate	3648-20-2	NE	NE	NE	NE	NE	NE	NE	NE
Galvanized Steel	Mixture	NE	NE	NE	NE	NE	NE	NE	NE
Graphite	7782-42-5	2 (resp. fract.)	NE	15 mppcf (based on impinger samples counted by light field techniques)		2.5 (resp. dust)	NE	NE	DFG MAK: TWA = 1.5 (respirable fraction); 4 (inhalable fraction) DFG MAK Pregnancy Risk Classification: C
Methylene Bisphenyl Isocyanate	101-68-8	0.051	NE	NE	0.2 (ceiling)	0.05	0.2 (ceiling g) 10 min.	75 ppm	DFG MAKs: TWA: 0.05 (inhalable fraction); Skin PEAK: 1•MAK 15 min. average value, 4 per shift, 1- hr interval, 0.1 (ceiling); Skin Danger of Sensitization of the Skin and Airways DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-D, EPA-CBD, IARC-3, MAK-4

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

GRAPHITE:

Belgium: TWA = 2 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 2.5 mg/m³ (respirable), MAY 2011
Finland: TWA = 2 mg/m³, NOV 2011
France: VME = 2 mg/m³, FEB 2006
Germany: MAK = 1.5 mg/m³, resp, 2011
Germany: MAK = 4 mg/m³, inhal, 2011
Iceland: TWA = 2.5 mg/m³ (resp. dust), NOV 2011
Japan: OEL = 0.5 mg/m³ (respirable), 2 mg/m³ (total), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Korea: TWA = 2.5 mg/m³, 2006
Mexico: TWA = 2 mg/m³, 2004
The Netherlands: MAC-TGG = 2 mg/m³, 2003
New Zealand: TWA = 3 mg/m³ (respirable dust), JAN 2002
Peru: TWA = 2 mg/m³, JUL 2005
Sweden: TWA = 0.2 f/cc, JUN 2005
Sweden: TWA = 5 mg/m³, JUN 2005

GRAPHITE (continued):

Switzerland: MAK-W = 5 mg/m³, inhal, JAN 2011
Switzerland: MAK-W = 2.5 mg/m³, resp, JAN 2011
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV
METHYLENE BISPHENOL ISOCYANATE:
Australia: TWA = 0.02 mg(NCO)/m³, STEL 0.07 mg(NCO)/m³, JUL 2008
Austria: MAK-TMW = 0.005 ppm (0.05 mg/m³); KZW = 0.01 ppm (0.1 mg/m³), sen, 2007
Belgium: TWA = 0.005 ppm (0.052 mg/m³), MAR 2002
Denmark: TWA = 0.005 ppm (0.05 mg/m³), OCT 2002
France: VME = 0.01 ppm (0.1 mg/m³), VLE = 0.02 ppm (0.2 mg/m³), FEB 2006
Germany: MAK = 0.05 mg/m³, inhal, 2011
Hungary: TWA = 0.05 mg/m³, STEL = 0.05 mg/m³, SEP 2000
Iceland: TWA = 0.005 ppm (0.05 mg/m³), STEL = 0.01 ppm (0.1 mg/m³), sen, NOV 2011
Japan: OEL = 0.05 mg/m³, A1 sen, MAY 2012
Korea: TWA = 0.005 ppm (0.055 mg/m³), 2006

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

International Occupational Exposure Limits (continued):

METHYLENE BISPHENOL ISOCYANATE (continued):

Mexico: TWA = 0.005 ppm (0.051 mg/m³), 2004
The Netherlands: MAC-TGG = 0.05 mg/m³, 2003
New Zealand: TWA = 0.02 mg(NCO)/m³; STEL = 0.07 mg(NCO)/m³, sen, JAN 2002
Peru: TWA = 0.005 ppm (0.051 mg/m³), JUL 2005
The Philippines: TWA = 0.02 ppm (0.2 mg/m³), JAN 1993
Poland: MAC(TWA) = 0.05 mg/m³, MAC(C) = 0.2 mg/m³, JAN 1999

METHYLENE BISPHENOL ISOCYANATE (continued):

Russia: STEL = 0.5 mg/m³, Skin, JUN 2003
Sweden: TWA = 0.002 ppm (0.03 mg/m³), CL = 0.005 ppm (0.05 mg/m³), Sen, JUN 2005
Switzerland: CL = 0.02 mg(NCO)/m³, skin, sen, JAN 2011
Thailand: TWA = 0.02 ppm (0.2 mg/m³), JAN 1993
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Due to the form of this product, respiratory protection is not normally required. If heated and fumes are generated, maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., coveralls, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Galvanized steel form lined with a rubberized solid.

MOLECULAR FORMULA: Mixture.

ODOR: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not available.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not applicable.

VAPOR DENSITY (air = 1): Not applicable.

EVAPORATION RATE (n-BuAc = 1): Not applicable.

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristic to distinguish a release of this product.

COLOR: Black.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 0

FLASH POINT: Not available.

BOILING POINT: Not applicable.

SPECIFIC GRAVITY (water = 1): Not applicable.

CARB VOC: Not applicable.

SCAQMD (U.S. EPA Method 24): Not applicable.

SOLUBILITY IN SOLVENTS: Not applicable.

pH: Not applicable.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., carbon, nitrogen and metal oxides, phthalates, ammonia, formaldehyde, hydrogen cyanide, nitriles, isocyanates, nitrosamines, hydrogen chloride, and acrylic monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: If this product is heated, inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Due to the isocyanate component, inhalation of fumes may cause respiratory sensitization and allergic reaction.

11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Contact with Skin or Eyes: Due to the form of the product, contact with the eyes is unlikely, unless heating causes fumes. Fumes may cause tearing and stinging to the eyes. Although this product contains a skin sensitizer, due to form of the product, skin sensitization is not likely.

Skin Absorption: Due to form of product, skin absorption is not a likely route of exposure.

Ingestion: Ingestion is not a likely route of exposure, due to the form of the product.

Injection: Injection is not likely, due to the form of the product.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.

Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system and eyes.

Chronic: Inhalation of fumes may cause respiratory sensitization.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Respiratory system.

TOXICITY DATA: No toxicity data are presented for components due to product form.

CARCINOGENICITY: Due to the physical nature of this product, carcinogenicity is not a hazard.

SENSITIZATION OF PRODUCT: Due to the isocyanate component, inhalation of fumes may cause respiratory sensitization and allergic reaction.



Symptoms may include difficulty breathing, coughing and wheezing.

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation and eye irritation.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic or teratogenic toxicity. As a phthalate compound, the Diundecyl Phthalate component may cause effects to the endocrine system, which can cause adverse reproductive effects. In addition, in animal studies, the Bis(2-hydroxy-3-tert-butyl-5-methylphenyl) methane component has caused adverse effects to fertility in males. Due to the form of this product, these effects are not likely to occur.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for components.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD	(BLUE)	1	
FLAMMABILITY HAZARD	(RED)	0	
PHYSICAL HAZARD	(YELLOW)	0	
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: As an article, this product will not be mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: No specific information is available regarding persistence and biodegradability.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: The components of this product are not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: As an article, this product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: No; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): As an article, this product is not subject to Threshold Planning Quantities, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 lists.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: As an article, this product is not subject the Controlled Product Regulations.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: As an article, this product is not subjected to requirements under the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS: As an article, this product is not subjected to requirements under ENCS Inventory.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: As an article, this product is not subjected to requirements under the Japanese METI.

Poisonous and Deleterious Substances Control Law: As an article, this product is not subjected to requirements under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: As an article, this product is not subjected to requirements under the Korean ECL Inventory.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is not classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: As an article, this product is not subjected to requirements under the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: As an article, this product is not subjected to requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: As an article, this product is not subjected to requirements under the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): CAUTION! FUMES GENERATED BY HEATING OR MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. INHALATION OF FUMES MAY CAUSE RESPIRATORY SENSITIZATION IN PERSONS SUSCEPTIBLE TO ISOCYANATES. Avoid breathing fumes or vapors. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of adverse effects after contact, flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Pick-up waste product and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

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REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: **1:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: **0 Minimal Hazard:** No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 0 (continued): **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. **3 Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°F (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°F (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; **3 (continued):** Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric). **PHYSICAL HAZARD: 0 Water Reactivity:** Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react.).

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 1 *Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. *Explosives:* Division 1.5 and 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. 2 *Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. 3 *Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure \geq 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. 4 *Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability 4. *Oxidizers:* No 4 rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. 1 Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. 2 Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. 3 Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. 4 Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 100 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD0, LDLo, and LD0, TC, TCo, LCLo, and LC0:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

DEFINITION OF TERMS (Continued)

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLM: Median threshold limit. log K_{OW} or log K_{OC}: Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation.

REGULATORY INFORMATION (continued):

U.S. (continued):

SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

SpecSeal® Series FP Intumescent Firestop Plug

TRADE/MATERIAL NAME:

Rubber Mixture

CHEMICAL NAMES:

None

SYNONYMS:

Sealing Device

RELEVANT USE of the SUBSTANCE:

Other than Relevant Use

USES ADVISED AGAINST:

SUPPLIER/MANUFACTURER'S NAME (USA/Canada): Specified Technologies, Inc.

Address:

210 Evans Way,
Somerville, New Jersey 08876

Business Phone:

(908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)

Emergency Phone:

U.S., Canada: 1-800-255-3924 (24 hrs)

International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS:

techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

This product is defined as an "Article" under the U.S. Federal OSHA Hazard Communication Standard (29 CFR 1910.1200), EU Directives, and the Canadian Workplace Hazardous Materials Standard. Refer to Section 15 (Regulatory Information) for specific regulatory citations. As articles, this product presents negligible health and physical hazards under reasonably anticipated circumstances of use. Subsequently, a Material Safety Data Sheet is not required under Standards cited above. This document is prepared to provide persons using this product with additional safety information.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

EMERGENCY OVERVIEW: Product Description: This product is an article, which consists of a soft, flexible intumescent, rubberized round, red plug that expands under fire conditions. **Health Hazards:** These products are articles and present no contact hazard under normal conditions of handling. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation and possible respiratory sensitization. Eye contact with vapors or fume may also cause irritation. **Flammability Hazards:** These products are designed to be fire-retardant; however if exposed to direct flame for a prolonged period, the product may ignite. If involved in a fire, these products will release smoke, acrid vapors and toxic gases (e.g., carbon, metal and nitrogen oxides, phthalates, ammonia, formaldehyde, acetaldehyde, isocyanates, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Although the products contain materials that may cause acute and or chronic toxicity to aquatic organisms, due to their form, the products are not expected to cause toxic effects to aquatic organisms. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Phthalate		Listed	Proprietary			20-30%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Reproductive Toxicity Cat. 2, Eye Irritation Cat. 2B, Aquatic Acute Cat. 1, Aquatic Chronic Cat. 3 Hazard Codes: H361d, H320, H410, H412
Proprietary Ammonium Polyphosphoric Acid		Listed	Proprietary			15-25%	Classification Not Applicable
Proprietary Poly Glycol		Listed	Proprietary			15-20%	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Carbon		Listed	Excepted as Mineral	Proprietary		10-15%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2B, STOT (Inhalation-Respiratory Irritation) SE Cat. 3 Hazard Codes: H320, H335
Proprietary 1,3-Butadiene Homopolymer		Listed	Proprietary			10-15%	Classification Not Applicable
Methylene Bisphenyl Isocyanate & Modified MDI	101-68-8	Listed	1-561	KE-35565		1-12%	PUBLISHED CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2, Acute Inhalation Toxicity Cat. 4, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Skin Sensitization Cat. 1B, Respiratory Sensitization Cat. 1B, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, STOT RE Cat. 2 Hazard Codes: H351, H332, H315, H317, H319, H334, H335, H373
Proprietary Oxydipropanol		Listed	Proprietary			1-3%	Classification Not Applicable
Other Trace Ingredients						Balance	Classification Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual. Wash clothing and thoroughly clean shoes before reuse.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If heated and fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this particles from this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: Due to the form of the product, ingestion is unlikely.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

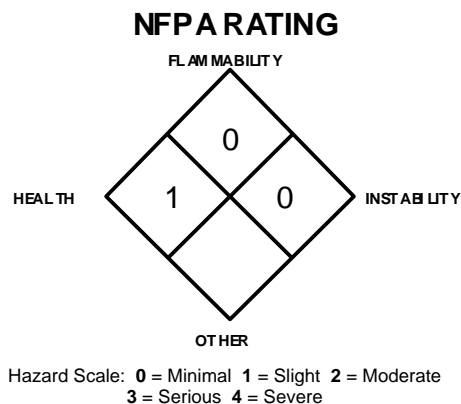
UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, metal and nitrogen oxides, phthalates, ammonia, formaldehyde, acetaldehyde, isocyanates, and acrylic monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: If this product is contaminated by chemical products, this situation should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small and Large Spills: Wear sturdy gloves to protect against cuts, eye protection, and appropriate body protection. Steel-toed boots are recommended to protect against injury to feet.

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small and Large Spills: This product can be picked-up and should be disposed of properly if the product cannot be reclaimed. .

All Spills: Place all residue in appropriate containment and seal. Take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: If during the use of this product, dusts, particulates or fumes are generated, avoid breathing, or skin or eye contact. Avoid touching heated product. Wash hands thoroughly after handling this product or containers of this product.

CONDITIONS FOR SAFE STORAGE: Store this product in a cool, dry location, away from sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity), water, heat and flame.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters: These limits are normally not applicable due to the form of the product. Heating to the point of decomposition may result in exposure.

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Proprietary Ammonium Polyphosphoric Acid		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary 1,3-Butadiene Homopolymer		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Oxydiopropanol		NE	NE	NE	NE	NE	NE	NE	DFG MAK: TWA = 100 (inhalable fraction-sum of vapor & aerosol), skin PEAK: 2•MAK 15 min. average value, 4 per shift, 1-hr interval, 0.1 (ceiling); Skin DFG MAK Pregnancy Risk Classification: C
Proprietary Carbon		2 (resp. fract.)	NE	15 mppcf (based on impinger samples counted by light field techniques)		2.5 (resp. dust)	NE	NE	DFG MAK: TWA = 1.5 (respirable fraction); 4 (inhalable fraction) DFG MAK Pregnancy Risk Classification: C
Methylene Bisphenyl Isocyanate	101-68-8	0.051	NE	NE	0.2 (ceiling)	0.05	0.2 (ceiling) 10 min.	75 ppm	DFG MAKs: TWA: 0.05 (inhalable fraction); Skin PEAK: 1•MAK 15 min. average value, 4 per shift, 1-hr interval, 0.1 (ceiling); Skin Danger of Sensitization of the Skin and Airways DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-D, EPA-CBD, IARC-3, MAK-4
Proprietary Polyglycol		NE	NE	NE	NE	NE	NE	NE	AIHA WEEL: TWA: 10
Proprietary Phthalate		NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

PROPRIETARY CARBON:

Belgium: TWA = 2 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 2.5 mg/m³ (respirable), MAY 2011
Finland: TWA = 2 mg/m³, NOV 2011
France: VME = 2 mg/m³, FEB 2006
Germany: MAK = 1.5 mg/m³, resp, 2011
Germany: MAK = 4 mg/m³, inhal, 2011
Iceland: TWA = 2.5 mg/m³ (resp. dust), NOV 2011
Japan: OEL = 0.5 mg/m³ (respirable), 2 mg/m³ (total), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Korea: TWA = 2.5 mg/m³, 2006
Mexico: TWA = 2 mg/m³, 2004

PROPRIETARY CARBON (continued):

The Netherlands: MAC-TGG = 2 mg/m³, 2003
New Zealand: TWA = 3 mg/m³ (respirable dust), JAN 2002
Peru: TWA = 2 mg/m³, JUL 2005
Sweden: TWA = 0.2 f/cc, JUN 2005
Sweden: TWA = 5 mg/m³, JUN 2005
Switzerland: MAK-W = 5 mg/m³, inhal, JAN 2011
Switzerland: MAK-W = 2.5 mg/m³, resp, JAN 2011
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV
METHYLENE BISPHENOL ISOCYANATE:
Australia: TWA = 0.02 mg(NCO)/m³, STEL 0.07 mg(NCO)/m³, JUL 2008
Austria: MAK-TMW = 0.005 ppm (0.05 mg/m³); KZW = 0.01 ppm (0.1 mg/m³), sen, 2007

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

International Occupational Exposure Limits (continued):

METHYLENE BISPHENOL ISOCYANATE (continued):

Belgium: TWA = 0.005 ppm (0.052 mg/m³), MAR 2002
Denmark: TWA = 0.005 ppm (0.05 mg/m³), OCT 2002
France: VME = 0.01 ppm (0.1 mg/m³), VLE = 0.02 ppm (0.2 mg/m³), FEB 2006
Germany: MAK = 0.05 mg/m³, inhal, 2011
Hungary: TWA = 0.05 mg/m³, STEL = 0.05 mg/m³, SEP 2000
Iceland: TWA = 0.005 ppm (0.05 mg/m³), STEL = 0.01 ppm (0.1 mg/m³), sen, NOV 2011
Japan: OEL = 0.05 mg/m³, A1 sen, MAY 2012
Korea: TWA = 0.005 ppm (0.055 mg/m³), 2006
Mexico: TWA = 0.005 ppm (0.051 mg/m³), 2004

METHYLENE BISPHENOL ISOCYANATE (continued):

The Netherlands: MAC-TGG = 0.05 mg/m³, 2003
New Zealand: TWA = 0.02 mg(NCO)/m³; STEL = 0.07 mg(NCO)/m³, sen, JAN 2002
Peru: TWA = 0.005 ppm (0.051 mg/m³), JUL 2005
The Philippines: TWA = 0.02 ppm (0.2 mg/m³), JAN 1993
Poland: MAC(TWA) = 0.05 mg/m³, MAC(C) = 0.2 mg/m³, JAN 1999
Russia: STEL = 0.5 mg/m³, Skin, JUN 2003
Sweden: TWA = 0.002 ppm (0.03 mg/m³), CL = 0.005 ppm (0.05 mg/m³), Sen, JUN 2005
Switzerland: CL = 0.02 mg(NCO)/m³, skin, sen, JAN 2011
Thailand: TWA = 0.02 ppm (0.2 mg/m³), JAN 1993
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Due to the form of this product, respiratory protection is not normally required. If heated and fumes are generated, maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., coveralls, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Soft rubberized solid.

MOLECULAR FORMULA: Mixture.

ODOR: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not available.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not applicable.

VAPOR DENSITY (air = 1): Not applicable.

EVAPORATION RATE (n-BuAc = 1): Not applicable.

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristic to distinguish a release of this product.

COLOR: Red.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 0

FLASH POINT: Not available.

BOILING POINT: Not applicable.

SPECIFIC GRAVITY (water = 1): Not applicable.

CARB VOC: Not applicable.

SCAQMD (U.S. EPA Method 24): Not applicable.

SOLUBILITY IN SOLVENTS: Not applicable.

pH: Not applicable.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., carbon, metal and nitrogen oxides, phthalates, ammonia, formaldehyde, acetaldehyde, isocyanates, and acrylic monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Inhalation: If this product is heated, inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Due to the isocyanate component, inhalation of fumes may cause respiratory sensitization and allergic reaction. Under extreme fire conditions metal fumes may also be produced.

Contact with Skin or Eyes: Due to the form of the product, contact with the eyes is unlikely, unless heating causes fumes. Fumes may cause tearing and stinging to the eyes. Although this product contains a skin sensitizer, due to form of the product, skin sensitization is not likely.

Skin Absorption: Due to form of product, skin absorption is not a likely route of exposure.

Ingestion: Ingestion is not a likely route of exposure, due to the form of the product.

Injection: Injection is not likely, due to the form of the product.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: **An Explanation in Lay Terms.** Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system and eyes.

Chronic: Inhalation of fumes may cause respiratory sensitization.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Respiratory system.

TOXICITY DATA: No toxicity data are presented for components due to product form.

CARCINOGENICITY: Due to the physical nature of this product, carcinogenicity is not a hazard.

SENSITIZATION OF PRODUCT: Due to the isocyanate component, inhalation of fumes may cause respiratory sensitization and allergic reaction.



Symptoms may include difficulty breathing, coughing and wheezing.

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation and eye irritation.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic or teratogenic toxicity. As a phthalate compound, the Diundecyl Phthalate component may cause effects to the endocrine system, which can cause adverse reproductive effects. Due to the form of this product, these effects are not likely to occur.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for components.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD	(BLUE)	1	
FLAMMABILITY HAZARD	(RED)	0	
PHYSICAL HAZARD	(YELLOW)	0	
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: As an article, this product will not be mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: No specific information is available regarding persistence and biodegradability.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: The components of this product are not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

14. TRANSPORTATION INFORMATION (Continued)

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: As an article, this product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: No; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): As an article, this product is not subject to Threshold Planning Quantities, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 lists.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: As a phthalate, the Undecyl Alcohol Phthalate component is regulated by the CEPA as a substance that may present, to individuals in Canada, the greatest potential for exposure; or is persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies..

Canadian WHMIS Classification and Symbols: As an article, this product is not subject the Controlled Product Regulations.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: As an article, this product is not subjected to requirements under the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS: As an article, this product is not subjected to requirements under ENCS Inventory.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: As an article, this product is not subjected to requirements under the Japanese METI.

Poisonous and Deleterious Substances Control Law: As an article, this product is not subjected to requirements under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: As an article, this product is not subjected to requirements under the Korean ECL Inventory.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is not classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: As an article, this product is not subjected to requirements under the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: As an article, this product is not subjected to requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: As an article, this product is not subjected to requirements under the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION! FUMES GENERATED BY HEATING OR DECOMPOSITION MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. INHALATION OF FUMES MAY CAUSE RESPIRATORY SENSITIZATION IN PERSONS SUSCEPTIBLE TO ISOCYANATES.** Avoid breathing fumes or vapors. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of adverse effects after contact, flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (continued): FIRST-AID (continued): If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Pick-up waste product and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

16. OTHER INFORMATION (Continued)

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

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REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: **1:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible). **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 < 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 1 (continued): Skin Irritation: Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. **3 Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; **3 (continued):** Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react.). **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. **Unstable Reactives:** Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water.

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 1 (continued): Organic Peroxides: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀, or TC, TCo, LCLo, and LCo:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** **IARC:** International Agency for Research on Cancer. **NTP:** National Toxicology Program. **RTECS:** Registry of Toxic Effects of Chemical Substances. **IARC and NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI:** ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TLm:** Median threshold limit. **log K_{OW}** or **log K_{OC}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **SARA:** Superfund Amendments and Reauthorization Act. **ISCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

SpecSeal® LCC Intumescent Firestop Collars

TRADE/MATERIAL NAME: Rubber Mixture
 CHEMICAL NAMES: None
 SYNONYMS: Sealant
 RELEVANT USE of the SUBSTANCE: Other than Relevant Use
 USES ADVISED AGAINST:
 SUPPLIER/MANUFACTURER'S NAME (USA/Canada): **Specified Technologies, Inc.**
 Address: 210 Evans Way,
 Somerville, New Jersey 08876
 Business Phone: (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
 Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
 International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

This product is defined as an "Article" under the U.S. Federal OSHA Hazard Communication Standard (29 CFR 1910.1200), EU Directives, and the Canadian Workplace Hazardous Materials Standard. Refer to Section 15 (Regulatory Information) for specific regulatory citations. As articles, this product presents negligible health and physical hazards under reasonably anticipated circumstances of use. Subsequently, a Material Safety Data Sheet is not required under Standards cited above. This document is prepared to provide persons using this product with additional safety information.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

EMERGENCY OVERVIEW: Product Description: This product is an article, which consists of a galvanized metal ring, lined with an intumescent, rubberized liner that expands under fire conditions. **Health Hazards:** These products are articles and present no contact hazard under normal conditions of handling. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation and possible respiratory sensitization. Eye contact with vapors or fume may also cause irritation. **Flammability Hazards:** These products are designed to be fire-retardant; however if exposed to direct flame for a prolonged period, the product may ignite. If involved in a fire, these products will release smoke, acrid vapors and toxic gases (e.g., carbon and nitrogen oxides, phthalates, ammonia, formaldehyde, hydrogen cyanide, nitriles, isocyanates, nitrosamines, hydrogen chloride, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Although the products contain materials that may cause acute and or chronic toxicity to aquatic organisms, due to their form, the products are not expected to cause toxic effects to aquatic organisms. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Graphite	7782-42-5	Listed	Excepted as Mineral	KE-18101		40-50	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2B, STOT (Inhalation-Respiratory Irritation) SE Cat. 3 Hazard Codes: H320, H335
1,3-Butadiene Homopolymer, Hydroxy Terminated	69102-90-5	Listed	6-722, 6-757	KE-03730		25-30	Classification Not Applicable
Soybean Oil	8001-22-7	Listed	Not Listed	KE-31718		20-25	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Methylene Bisphenyl Isocyanate	101-68-8	Listed	1-561	KE-35565		0.5-2.0%	PUBLISHED CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2, Acute Inhalation Toxicity Cat. 4, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Skin Sensitization Cat. 1B, Respiratory Sensitization Cat. 1B, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, STOT RE Cat. 2 Hazard Codes: H351, H332, H315, H317, H319, H334, H335, H373
Galvanized Metal	Mixture	Mixture	Mixture	Mixture	Mixture	Not Applicable	Classification Not Applicable
Other Trace Ingredients						Balance	Classification Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual. Wash clothing and thoroughly clean shoes before reuse.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If heated and fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this particles from this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: Due to the form of the product, ingestion is unlikely.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

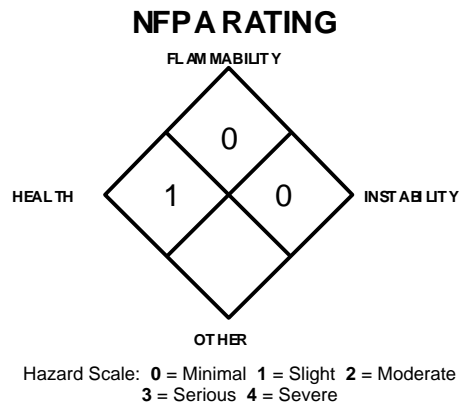
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon and nitrogen oxides, phthalates, ammonia, formaldehyde, hydrogen cyanide, nitriles, isocyanates, nitrosamines, hydrogen chloride, and acrylic monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire

responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: If this product is contaminated by chemical products, this situation should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small and Large Spills: Wear sturdy gloves to protect against cuts, eye protection, and appropriate body protection. Steel-toed boots are recommended to protect against injury to feet.

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small and Large Spills: This product can be picked-up and should be disposed of properly if the product cannot be reclaimed.

All Spills: Place all residue in appropriate containment and seal. Take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

6. ACCIDENTAL RELEASE MEASURES (Continued)

ENVIRONMENTAL PRECAUTIONS: Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: If during the use of this product, dusts, particulates or fumes are generated, avoid breathing, or skin or eye contact. Avoid touching heated product. Wash hands thoroughly after handling this product or containers of this product.

CONDITIONS FOR SAFE STORAGE: Store this product in a cool, dry location, away from sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity), water, heat and flame.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters: These limits are normally not applicable due to the form of the product. Heating to the point of decomposition may result in exposure.

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
1,3-Butadiene Homopolymer Hydroxy Terminated	69102-90-5	NE	NE	NE	NE	NE	NE	NE	NE
Galvanized Metal	Mixture	NE	NE	NE	NE	NE	NE	NE	NE
Graphite	7782-42-5	2 (resp. fract.)	NE	15 mppcf (based on impinger samples counted by light field techniques)		2.5 (resp. dust)	NE	NE	DFG MAK: TWA = 1.5 (respirable fraction); 4 (inhalable fraction) DFG MAK Pregnancy Risk Classification: C
Methylene Bisphenyl Isocyanate	101-68-8	0.051	NE	NE	0.2 (ceiling)	0.05	0.2 (ceiling) 10 min.	75 ppm	DFG MAKs: TWA: 0.05 (inhalable fraction); Skin PEAK: 1•MAK 15 min. average value, 4 per shift, 1-hr interval, 0.1 (ceiling); Skin Danger of Sensitization of the Skin and Airways DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-D, EPA-CBD, IARC-3, MAK-4
Soybean Oil Exposure limits given are for vegetable Oil Mist	8001-22-7	NE	NE	15 (total dust.), 5 (resp. fract.)	NE	10 (total dust.), 5 (resp. fract.)	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

GRAPHITE:

Belgium: TWA = 2 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 2.5 mg/m³ (respirable), MAY 2011
Finland: TWA = 2 mg/m³, NOV 2011
France: VME = 2 mg/m³, FEB 2006
Germany: MAK = 1.5 mg/m³, resp, 2011
Germany: MAK = 4 mg/m³, inhal, 2011
Iceland: TWA = 2.5 mg/m³ (resp. dust), NOV 2011
Japan: OEL = 0.5 mg/m³ (respirable), 2 mg/m³ (total), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Korea: TWA = 2.5 mg/m³, 2006
Mexico: TWA = 2 mg/m³, 2004
The Netherlands: MAC-TGG = 2 mg/m³, 2003
New Zealand: TWA = 3 mg/m³ (respirable dust), JAN 2002
Peru: TWA = 2 mg/m³, JUL 2005
Sweden: TWA = 0.2 f/cc, JUN 2005
Sweden: TWA = 5 mg/m³, JUN 2005
Switzerland: MAK-W = 5 mg/m³, inhal, JAN 2011
Switzerland: MAK-W = 2.5 mg/m³, resp, JAN 2011
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

METHYLENE BISPHENOL ISOCYANATE:

Australia: TWA = 0.02 mg(NCO)/m³, STEL 0.07 mg(NCO)/m³, JUL 2008

METHYLENE BISPHENOL ISOCYANATE (continued):

Austria: MAK-TMW = 0.005 ppm (0.05 mg/m³); KZW = 0.01 ppm (0.1 mg/m³), sen, 2007
Belgium: TWA = 0.005 ppm (0.052 mg/m³), MAR 2002
Denmark: TWA = 0.005 ppm (0.05 mg/m³), OCT 2002
France: VME = 0.01 ppm (0.1 mg/m³), VLE = 0.02 ppm (0.2 mg/m³), FEB 2006
Germany: MAK = 0.05 mg/m³, inhal, 2011
Hungary: TWA = 0.05 mg/m³, STEL = 0.05 mg/m³, SEP 2000
Iceland: TWA = 0.005 ppm (0.05 mg/m³), STEL = 0.01 ppm (0.1 mg/m³), sen, NOV 2011
Japan: OEL = 0.05 mg/m³, A1 sen, MAY 2012
Korea: TWA = 0.005 ppm (0.055 mg/m³), 2006
Mexico: TWA = 0.005 ppm (0.051 mg/m³), 2004
The Netherlands: MAC-TGG = 0.05 mg/m³, 2003
New Zealand: TWA = 0.02 mg(NCO)/m³; STEL = 0.07 mg(NCO)/m³, sen, JAN 2002
Peru: TWA = 0,005 ppm (0.051 mg/m³), JUL 2005
The Philippines: TWA = 0.02 ppm (0.2 mg/m³), JAN 1993
Poland: MAC(TWA) = 0.05 mg/m³, MAC(C) = 0.2 mg/m³, JAN 1999
Russia: STEL = 0.5 mg/m³, Skin, JUN 2003
Sweden: TWA = 0.002 ppm (0.03 mg/m³), CL = 0.005 ppm (0.05 mg/m³), Sen, JUN 2005
Switzerland: CL = 0.02 mg(NCO)/m³, skin, sen, JAN 2011
Thailand: TWA = 0.02 ppm (0.2 mg/m³), JAN 1993
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Due to the form of this product, respiratory protection is not normally required. If heated and fumes are generated, maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., coveralls, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Galvanized metal ring liner with a rubberized solid.

MOLECULAR FORMULA: Mixture.

ODOR: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not available.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not applicable.

VAPOR DENSITY (air = 1): Not applicable.

EVAPORATION RATE (n-BuAc = 1): Not applicable.

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristic to distinguish a release of this product.

COLOR: Multiple.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 0

FLASH POINT: Not available.

BOILING POINT: Not applicable.

SPECIFIC GRAVITY (water = 1): Not applicable.

CARB VOC: Not applicable.

SCAQMD (U.S. EPA Method 24): Not applicable.

SOLUBILITY IN SOLVENTS: Not applicable.

pH: Not applicable.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., carbon and nitrogen oxides, phthalates, ammonia, formaldehyde, hydrogen cyanide, nitriles, isocyanates, nitrosamines, hydrogen chloride, and acrylic monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: If this product is heated, inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Due to the isocyanate component, inhalation of fumes may cause respiratory sensitization and allergic reaction. Under extreme fire conditions metal fumes may also be produced.

Contact with Skin or Eyes: Due to the form of the product, contact with the eyes is unlikely, unless heating causes fumes. Fumes may cause tearing and stinging to the eyes. Although this product contains a skin sensitizer, due to form of the product, skin sensitization is not likely.

Skin Absorption: Due to form of product, skin absorption is not a likely route of exposure.

Ingestion: Ingestion is not a likely route of exposure, due to the form of the product.

Injection: Injection is not likely, due to the form of the product.

11. TOXICOLOGICAL INFORMATION (Continued)

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay

Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system and eyes.

Chronic: Inhalation of fumes may cause respiratory sensitization.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Respiratory system.

TOXICITY DATA: No toxicity data are presented for components due to product form.

CARCINOGENICITY: Due to the physical nature of this product, carcinogenicity is not a hazard.

SENSITIZATION OF PRODUCT: Due to the isocyanate component, inhalation of fumes may cause respiratory sensitization and allergic reaction. Symptoms may include difficulty breathing, coughing and wheezing.

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation and eye irritation.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic or teratogenic toxicity.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for components.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: As an article, this product will not be mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: No specific information is available regarding persistence and biodegradability.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: The components of this product are not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

14. TRANSPORTATION INFORMATION (Continued)

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: As an article, this product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: No; CHRONIC: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): As an article, this product is not subject to Threshold Planning Quantities, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 lists.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: As an article, this product is not subject the Controlled Product Regulations.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: As an article, this product is not subjected to requirements under the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS: As an article, this product is not subjected to requirements under ENCS Inventory.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: As an article, this product is not subjected to requirements under the Japanese METI.

Poisonous and Deleterious Substances Control Law: As an article, this product is not subjected to requirements under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: As an article, this product is not subjected to requirements under the Korean ECL Inventory.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is not classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: As an article, this product is not subjected to requirements under the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: As an article, this product is not subjected to requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: As an article, this product is not subjected to requirements under the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** FUMES GENERATED BY HEATING OR MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. INHALATION OF FUMES MAY CAUSE RESPIRATORY SENSITIZATION IN PERSONS SUSCEPTIBLE TO ISOCYANATES. Avoid breathing fumes or vapors. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of adverse effects after contact, flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Pick-up waste product and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under CLP Regulation (EC) 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: This product is and article and is not required to be classified under European Community Council Directive 67/548/EEC or subsequent Directives.

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: As an article, this product is not subject to ISHA Notice 2009-68.

16. OTHER INFORMATION (Continued)

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

DATE OF PRINTING: May 29, 2015

REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: **1:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible). **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. *Eye Irritation:* Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. *Oral Toxicity LD₅₀ Rat > 5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 2000 mg/kg. Inhalation Toxicity 4-hrs LC₅₀ Rat > 20 mg/L. 1 Slight Hazard:* Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. *Skin Irritation:* Slightly or mildly irritating, PII or Draize > 0 < 5. *Eye Irritation:* Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. *Oral Toxicity LD₅₀ Rat > 500–5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 1000–2000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat > 2–20 mg/L. 2 Moderate Hazard:* Temporary or transitory injury may occur; prolonged exposure may affect the CNS. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. *Eye Irritation:* Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. *Oral Toxicity LD₅₀ Rat > 50–500 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 200–1000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat > 0.5–2 mg/L. 3 Serious Hazard:* Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD₅₀ Rat > 1–50 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit > 20–200 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat > 0.05–0.5 mg/L. 4 Severe Hazard:* Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. *Skin Irritation:* Not appropriate. Do not rate as a 4, based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a 4, based on eye irritation alone. *Oral Toxicity LD₅₀ Rat < 1 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit < 20 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat < 0.05 mg/L.*

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued)

FLAMMABILITY HAZARD (continued): 1 Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; **3 (continued):** Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No 0 rating. *Unstable Reactives:* Substances that will not polymerize, decompose, condense, or self-react.). **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. *Explosives:* Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability 4. *Oxidizers:* No 4 rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 4 Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids). Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh).

Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **L_{EL}:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **U_{EL}:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LDo,** or **TC₀, LCLo, and LCo:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TLM:** Median threshold limit. **log K_{OW}** or **log K_{OC}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME: **SpecSeal® LCI Sealant**
CHEMICAL NAMES: Acrylate Polymer Mixture
SYNONYMS: None
RELEVANT USE of the SUBSTANCE: Sealant
USES ADVISED AGAINST: Other than Relevant Use
SUPPLIER/MANUFACTURER'S NAME (USA/Canada): **Specified Technologies, Inc.**
Address: 210 Evans Way,
Somerville, New Jersey 08876
Business Phone: (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifiestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3

Signal Word: Warning

Hazard Statement Codes: H351, H319, H335

Precautionary Statement Codes: P201, P202, P261, P271, P280, P308 + P313, P305 + P351 + P338, P337 + P313, P304 + P340, P312, P321, P403 + P233 + P405, P501

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

EMERGENCY OVERVIEW: Product Description: This product is a tan paste with a mild acrylic odor. **Health Hazards:** May be harmful if accidentally ingested. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume may also cause irritation. Brief skin contact is not expected to cause adverse effect. Prolonged skin contact may cause irritation. This product contains a known human carcinogen in trace amount; however, this hazard is not expected to be significant due to viscosity of the product. **Flammability Hazards:** This product is formulated to be non-flammable and non-combustible. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** This product has not been tested for potential hazards if released to the environment. All release should be avoided. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Acrylate Coating		Not Determined	Not Determined	Not Determined	Not Determined	35-50%	Classification Not Applicable
Aluminum Trihydrate	21645-51-2	Listed	1-17	KE-00980		15-25%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2A Hazard Codes: H319
Ground Limestone	1317-65-3	Listed	Excepted as Mineral	KE-21996		10-18%	Classification Not Applicable
Glass Oxide	65997-17-3	Listed	Not Listed	KE-17630		8-12%	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Sulfuric Acid Compound with Graphite	12777-87-6	Not Listed	Not Listed	KE-32585		2-5%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2 Hazard Codes: H351i
Proprietary Acrylic Copolymer in Aqueous Dispersion		Not Determined	Not Determined	Not Determined	Not Determined	1-2%	Classification Not Applicable
Crystalline Silica	14808-60-7	Listed	1-548	KE-29983		0.1-0.2%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2 Hazard Statement Codes: H350, H373
Water and Other Trace Ingredients						Balance	Classification Not Applicable
See Section 16 for full text of Classification							

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 338 °C (640 °F)

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

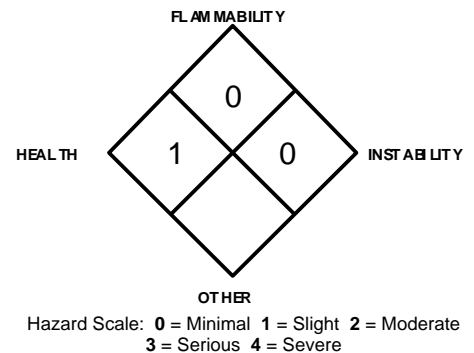
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

6. ACCIDENTAL RELEASE MEASURES (Continued)

PERSONAL PROTECTIVE EQUIPMENT (continued):

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polypads.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Containers should be grounded and separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and "NO SMOKING" signs in storage and use areas as appropriate. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Do not store above 55°C (131°F)

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Aluminum Trihydrate	21645-51-2	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 4 mg/m ³ (inhalable fraction); 1.5 mg/m ³ (respirable fraction) DFG MAK Pregnancy Risk Classification: D
Crystalline Silica (Quartz)	14808-60-7	0.025 (resp. fract.)	NE	30 mg/m ³ (total dust) % SO ₂ + 2 0.1 (vacated 1989 PEL) 250 mppcf (resp. dust) % SiO ₂ + 5 or 10 mg/m ³ (resp. dust) % SO ₂ + 2	NE	0.05 (resp. dust)	NE	50	Carcinogen: IARC-1, MAK-1 (respirable fraction), NOSH-Ca, NTP-K (respirable fraction), TLV-A2
Glass Oxide	65997-17-3	NE	NE	NE	NE	NE	NE	NE	NE
Ground Limestone	1317-65-3	NE	NE	15 (total dust); 1 (resp. fract.)	NE	10 (total dust); 1 (resp. fract.)	NE	NE	NE
Proprietary Acrylate Coating		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Acrylic Copolymer in Aqueous Dispersion		NE	NE	NE	NE	NE	NE	NE	NE
Sulfuric Acid Compound with Graphite	12777-87-6	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM HYDROXIDE:

Australia: TWA = 2 mg(Al)/m³, JUL 2008
Belgium: TWA = 2 mg(Al)/m³, MAR 2002
Finland: TWA = 2 mg(Al)/m³, NOV 2011
France: VME = 2 mg(Al)/m³, FEB 2006
Korea: TWA = 2 mg(Al)/m³, 2006
New Zealand: TWA = 2 mg(Al)/m³, JAN 2002
Russia: TWA = 6 mg/m³, JUN 2003
Sweden: TWA = 1 mg(Al)/m³, JUN 2005
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CRYSTALLINE SILICA:

Australia: TWA = 0.1 mg/m³, JUL 2008
Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
France: VME = 0.1 mg/m³, (resp), FEB 2006
Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
Korea: TWA = 0.1 mg/m³, 2006
Mexico: TWA = 0.1 mg/m³ (respirable), 2004
The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002

CRYSTALLINE SILICA (continued):

Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
Peru: TWA = 0.05 mg/m³, JUL 2005
Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

GROUND LIMESTONE:

Belgium: TWA = 10 mg/m³, MAR 2002
Hungary: TWA = 10 mg/m³, SEP 2000
Japan: OEL = 2 mg/m³ (resp. dust), 84 mg/m³ (total dust), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³; STEL = 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Poland: MAC(TWA) dust = 10 mg/m³, JAN 1999
Russia: STEL = 6 mg/m³, JUN 2003
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (respirable dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing).* Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste.

MOLECULAR FORMULA: Mixture.

ODOR: Mild acrylic.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not available.

VAPOR DENSITY (air = 1): Not available.

EVAPORATION RATE (n-BuAc = 1): > 1

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

COLOR: Tan.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 22

FLASH POINT: Not available.

BOILING POINT: > 100°C (> 212°F)

SPECIFIC GRAVITY (water = 1): 1.38

CARB VOC: 0.2.29 wt % (calc.)

SCAQMD (U.S. EPA Method 24): 33 gm/L

SOLUBILITY IN SOLVENTS: Not available.

pH: Not available.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

10. STABILITY and REACTIVITY (Continued)

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. The trace Crystalline Silica component is a known human carcinogen. Due to the form of this product, this hazard is not as significant as a powdered or solid products, however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin).

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system. Eye contact may cause mechanical irritation.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin).

This product contains Crystalline Silica, a known human carcinogen.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

ALUMINUM TRIHYDRATE:

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia
TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase
TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical
TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus
TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus
TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia
TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes
TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus
TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified

ALUMINUM TRIHYDRATE (continued):

TDLo (Intraperitoneal-Rat) 150 mg/kg
TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count
GROUND LIMESTONE:
TDLo (Intravenous-Rat) 30 mg/kg: Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: changes in lung weight; Blood: other changes
TCLo (Inhalation-Rat) 84 mg/m³/4 hours/40 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial); Liver: other changes; Kidney/Ureter/Bladder: other changes
TCLo (Inhalation-Rat) 250 mg/m³/2 hours/24 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis)

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Prolonged skin contact may cause irritation.

SENSITIZATION OF PRODUCT: This product is not currently known to cause allergic skin or respiratory reaction.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CRYSTALLINE SILICA: ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

11. TOXICOLOGICAL INFORMATION (Continued)

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Crystalline Silica component is on the California Proposition 65 lists. **WARNING!** This product contains a compound known to the State of California to cause Cancer.

15. REGULATORY INFORMATION (Continued)

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), or are not listed, per information in Section 2.

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory, are excepted, or are not listed, per information in Section 2.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory, or are not listed, per information in Section 2.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. PROLONGED SKIN CONTACT MAY CAUSE IRRITATION. CONTAINS TRACE AMOUNT OF CRYSTALLINE SILICA, A KNOWN HUMAN CARCINOGEN. Avoid breathing fumes or vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P261: Avoid breathing vapors, fume. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, clothing, eye protection and face protection. P284: Wear respiratory protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

16. OTHER INFORMATION (Continued)

COMPONENT CLASSIFICATION:

Labeling and Classification Full Text under GHS:

Aluminum Trihydrate: This is a self-classification.

Classification: Eye Irritation Category 2A

Hazard Statements: H319: Causes serious eye irritation.

Crystalline Silica: This is a self-classification.

Classification: Carcinogenic Category 1, Specific Target Organ Toxicity (Inhalation-Lungs) Repeated Exposure Category 2

Hazard Statements: H350: May cause cancer. H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

DATE OF PRINTING: May 29, 2015

REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible). 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. Skin Irritation: Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. Eye Irritation: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. Oral Toxicity LD₅₀ Rat: > 5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 2000 mg/kg. Inhalation Toxicity 4-hrs LC₅₀ Rat: > 20 mg/L. 1 Slight Hazard: Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. Skin Irritation: Slightly or mildly irritating. PII or Draize > 0 < 5. Eye Irritation: Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. Oral Toxicity LD₅₀ Rat: > 500–5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 1000–2000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: > 2–20 mg/L. 2 Moderate Hazard: Temporary or transitory injury may occur; prolonged exposure may affect the CNS. Skin Irritation: Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. Eye Irritation: Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. Oral Toxicity LD₅₀ Rat: > 50–500 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 200–1000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: > 0.5–2 mg/L.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 3 Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. Skin Irritation: Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. Eye Irritation: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. Oral Toxicity LD₅₀ Rat: > 1–50 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 20–200 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: > 0.05–0.5 mg/L. 4 Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. Skin Irritation: Not appropriate. Do not rate as a 4, based on skin irritation alone. Eye Irritation: Not appropriate. Do not rate as a 4, based on eye irritation alone. Oral Toxicity LD₅₀ Rat: ≤ 1 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: ≤ 20 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. 1 Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). 2 Moderate Hazard: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of coarse dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. 3 Serious Hazard: Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). 4 Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. Organic Peroxides: Materials that are normally stable, even under fire conditions and will not react with water. Explosives: Substances that are Non-Explosive. Compressed Gases: No Rating. Pyrophorics: No Rating. Oxidizers: No 0 rating. Unstable Reactives: Substances that will not polymerize, decompose, condense, or self-react. 1 Water Reactivity: Materials that change or decompose upon exposure to moisture. Organic Peroxides: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. Explosives: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. Compressed Gases: Pressure below OSHA definition. Pyrophorics: No Rating. Oxidizers: Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. Unstable Reactives: Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. 2 Water Reactivity: Materials that may react violently with water. Organic Peroxides: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. Explosives: Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. Compressed Gases: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) (500 psig). Pyrophorics: No Rating. Oxidizers: Packaging Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met.

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 3 (continued): *Reactive:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure \geq 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%) / cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability 4. *Oxidizers:* No 4 rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 2 (continued): Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀, or TC, TC₀, LCLo, and LC₀:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TLM:** Median threshold limit. **log K_{ow} or log K_{oc}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **IC:** Transport Canada. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME: **SpecSeal® LCI Sealant**
CHEMICAL NAMES: Acrylate Polymer Mixture
SYNONYMS: None
RELEVANT USE of the SUBSTANCE: Sealant
USES ADVISED AGAINST: Other than Relevant Use
SUPPLIER/MANUFACTURER'S NAME (USA/Canada): **Specified Technologies, Inc.**
Address: 210 Evans Way,
 Somerville, New Jersey 08876
 (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
 U.S., Canada: 1-800-255-3924 (24 hrs)
 International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifiestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3

Signal Word: Warning

Hazard Statement Codes: H351, H319, H335

Precautionary Statement Codes: P201, P202, P261, P271, P280, P308 + P313, P305 + P351 + P338, P337 + P313, P304 + P340, P312, P321, P403 + P233 + P405, P501

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

EMERGENCY OVERVIEW: Product Description: This product is a tan paste with a mild acrylic odor. **Health Hazards:** May be harmful if accidentally ingested. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume may also cause irritation. Brief skin contact is not expected to cause adverse effect. Prolonged skin contact may cause irritation. This product contains a known human carcinogen in trace amount; however, this hazard is not expected to be significant due to viscosity of the product. **Flammability Hazards:** This product is formulated to be non-flammable and non-combustible. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** This product has not been tested for potential hazards if released to the environment. All release should be avoided. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Acrylate Coating		Not Determined	Not Determined	Not Determined	Not Determined	35-50%	Classification Not Applicable
Aluminum Trihydrate	21645-51-2	Listed	1-17	KE-00980		15-25%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2A Hazard Codes: H319
Ground Limestone	1317-65-3	Listed	Excepted as Mineral	KE-21996		10-18%	Classification Not Applicable
Glass Oxide	65997-17-3	Listed	Not Listed	KE-17630		8-12%	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Sulfuric Acid Compound with Graphite	12777-87-6	Not Listed	Not Listed	KE-32585		2-5%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2 Hazard Codes: H351i
Proprietary Acrylic Copolymer in Aqueous Dispersion		Not Determined	Not Determined	Not Determined	Not Determined	1-2%	Classification Not Applicable
Crystalline Silica	14808-60-7	Listed	1-548	KE-29983		0.1-0.2%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2 Hazard Statement Codes: H350, H373
Water and Other Trace Ingredients See Section 16 for full text of Classification						Balance	Classification Not Applicable

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 338 °C (640 °F)

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

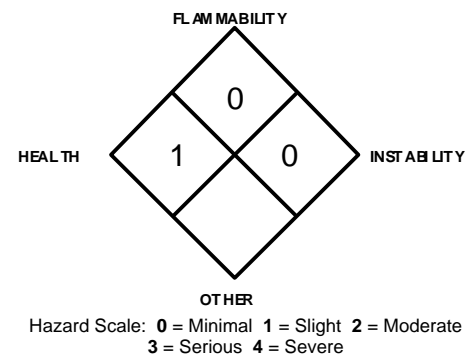
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

6. ACCIDENTAL RELEASE MEASURES (Continued)

PERSONAL PROTECTIVE EQUIPMENT (continued):

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polypads.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Containers should be grounded and separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and "NO SMOKING" signs in storage and use areas as appropriate. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Do not store above 55°C (131°F)

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Aluminum Trihydrate	21645-51-2	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 4 mg/m ³ (inhalable fraction); 1.5 mg/m ³ (respirable fraction) DFG MAK Pregnancy Risk Classification: D
Crystalline Silica (Quartz)	14808-60-7	0.025 (resp. fract.)	NE	30 mg/m ³ (total dust) % SO ₂ + 2 0.1 (vacated 1989 PEL) 250 mppcf (resp. dust) % SiO ₂ + 5 or 10 mg/m ³ (resp. dust) % SO ₂ + 2	NE	0.05 (resp. dust)	NE	50	Carcinogen: IARC-1, MAK-1 (respirable fraction), NOSH-Ca, NTP-K (respirable fraction), TLV-A2
Glass Oxide	65997-17-3	NE	NE	NE	NE	NE	NE	NE	NE
Ground Limestone	1317-65-3	NE	NE	15 (total dust); 1 (resp. fract.)	NE	10 (total dust); 1 (resp. fract.)	NE	NE	NE
Proprietary Acrylate Coating		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Acrylic Copolymer in Aqueous Dispersion		NE	NE	NE	NE	NE	NE	NE	NE
Sulfuric Acid Compound with Graphite	12777-87-6	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM HYDROXIDE:

Australia: TWA = 2 mg(Al)/m³, JUL 2008
Belgium: TWA = 2 mg(Al)/m³, MAR 2002
Finland: TWA = 2 mg(Al)/m³, NOV 2011
France: VME = 2 mg(Al)/m³, FEB 2006
Korea: TWA = 2 mg(Al)/m³, 2006
New Zealand: TWA = 2 mg(Al)/m³, JAN 2002
Russia: TWA = 6 mg/m³, JUN 2003
Sweden: TWA = 1 mg(Al)/m³, JUN 2005
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CRYSTALLINE SILICA:

Australia: TWA = 0.1 mg/m³, JUL 2008
Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
France: VME = 0.1 mg/m³, (resp), FEB 2006
Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
Korea: TWA = 0.1 mg/m³, 2006
Mexico: TWA = 0.1 mg/m³ (respirable), 2004
The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002

CRYSTALLINE SILICA (continued):

Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
Peru: TWA = 0.05 mg/m³, JUL 2005
Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

GROUND LIMESTONE:

Belgium: TWA = 10 mg/m³, MAR 2002
Hungary: TWA = 10 mg/m³, SEP 2000
Japan: OEL = 2 mg/m³ (resp. dust), 84 mg/m³ (total dust), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³; STEL = 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Poland: MAC(TWA) dust = 10 mg/m³, JAN 1999
Russia: STEL = 6 mg/m³, JUN 2003
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (respirable dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing).* Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste.

MOLECULAR FORMULA: Mixture.

ODOR: Mild acrylic.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not available.

VAPOR DENSITY (air = 1): Not available.

EVAPORATION RATE (n-BuAc = 1): > 1

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

COLOR: Tan.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 22

FLASH POINT: Not available.

BOILING POINT: > 100°C (> 212°F)

SPECIFIC GRAVITY (water = 1): 1.38

CARB VOC: 0.2.29 wt % (calc.)

SCAQMD (U.S. EPA Method 24): 33 gm/L

SOLUBILITY IN SOLVENTS: Not available.

pH: Not available.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

10. STABILITY and REACTIVITY (Continued)

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. The trace Crystalline Silica component is a known human carcinogen. Due to the form of this product, this hazard is not as significant as a powdered or solid products, however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin).

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system. Eye contact may cause mechanical irritation.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin). This product contains Crystalline Silica, a known human carcinogen.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

ALUMINUM TRIHYDRATE:

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia
TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase
TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical
TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus
TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus
TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia
TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes
TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus
TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified

ALUMINUM TRIHYDRATE (continued):

TDLo (Intraperitoneal-Rat) 150 mg/kg
TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count
GROUND LIMESTONE:
TDLo (Intravenous-Rat) 30 mg/kg: Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: changes in lung weight; Blood: other changes
TCLo (Inhalation-Rat) 84 mg/m³/4 hours/40 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial); Liver: other changes; Kidney/Ureter/Bladder: other changes
TCLo (Inhalation-Rat) 250 mg/m³/2 hours/24 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis)

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Prolonged skin contact may cause irritation.

SENSITIZATION OF PRODUCT: This product is not currently known to cause allergic skin or respiratory reaction.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CRYSTALLINE SILICA: ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

11. TOXICOLOGICAL INFORMATION (Continued)

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Crystalline Silica component is on the California Proposition 65 lists. **WARNING!** This product contains a compound known to the State of California to cause Cancer.

15. REGULATORY INFORMATION (Continued)

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), or are not listed, per information in Section 2.

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory, are excepted, or are not listed, per information in Section 2.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory, or are not listed, per information in Section 2.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. PROLONGED SKIN CONTACT MAY CAUSE IRRITATION. CONTAINS TRACE AMOUNT OF CRYSTALLINE SILICA, A KNOWN HUMAN CARCINOGEN. Avoid breathing fumes or vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P261: Avoid breathing vapors, fume. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, clothing, eye protection and face protection. P284: Wear respiratory protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

16. OTHER INFORMATION (Continued)

COMPONENT CLASSIFICATION:

Labeling and Classification Full Text under GHS:

Aluminum Trihydrate: This is a self-classification.

Classification: Eye Irritation Category 2A

Hazard Statements: H319: Causes serious eye irritation.

Crystalline Silica: This is a self-classification.

Classification: Carcinogenic Category 1, Specific Target Organ Toxicity (Inhalation-Lungs) Repeated Exposure Category 2

Hazard Statements: H350: May cause cancer. H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

DATE OF PRINTING: May 29, 2015

REVISION HISTORY: New.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible). 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELS: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. Skin Irritation: Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. Eye Irritation: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. Oral Toxicity LD₅₀ Rat: > 5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 2000 mg/kg. Inhalation Toxicity 4-hrs LC₅₀ Rat: > 20 mg/L. 1 Slight Hazard: Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. Skin Irritation: Slightly or mildly irritating. PII or Draize > 0 < 5. Eye Irritation: Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. Oral Toxicity LD₅₀ Rat: > 500–5000 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 1000–2000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: > 2–20 mg/L. 2 Moderate Hazard: Temporary or transitory injury may occur; prolonged exposure may affect the CNS. Skin Irritation: Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. Eye Irritation: Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. Oral Toxicity LD₅₀ Rat: > 50–500 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 200–1000 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: > 0.5–2 mg/L.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 3 Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. Skin Irritation: Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. Eye Irritation: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. Oral Toxicity LD₅₀ Rat: > 1–50 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: > 20–200 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: > 0.05–0.5 mg/L. 4 Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. Skin Irritation: Not appropriate. Do not rate as a 4, based on skin irritation alone. Eye Irritation: Not appropriate. Do not rate as a 4, based on eye irritation alone. Oral Toxicity LD₅₀ Rat: ≤ 1 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit: ≤ 20 mg/kg. Inhalation Toxicity LC₅₀ 4-hrs Rat: ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. 1 Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). 2 Moderate Hazard: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of coarse dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. 3 Serious Hazard: Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). 4 Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. Organic Peroxides: Materials that are normally stable, even under fire conditions and will not react with water. Explosives: Substances that are Non-Explosive. Compressed Gases: No Rating. Pyrophorics: No Rating. Oxidizers: No 0 rating. Unstable Reactives: Substances that will not polymerize, decompose, condense, or self-react. 1 Water Reactivity: Materials that change or decompose upon exposure to moisture. Organic Peroxides: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. Explosives: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. Compressed Gases: Pressure below OSHA definition. Pyrophorics: No Rating. Oxidizers: Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. Unstable Reactives: Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. 2 Water Reactivity: Materials that may react violently with water. Organic Peroxides: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. Explosives: Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. Compressed Gases: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) (500 psig). Pyrophorics: No Rating. Oxidizers: Packaging Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met.

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 3 (continued): *Reactive:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure \geq 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%) / cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability 4. *Oxidizers:* No 4 rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 2 (continued): Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀**, or **TC, TC₀, LCLo, and LC₀:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TLM:** Median threshold limit. **log K_{ow}** or **log K_{oc}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **IC:** Transport Canada. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



Material Safety Data Sheet

20-JUNE-2012

SpecSeal® FIRESTOP PILLOWS

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

PRODUCT NAME.....SpecSeal® Firestop Pillows
CHEMICAL FAMILY.....Does not apply

Company Identification

MANUFACTURER/DISTRIBUTOR

Specified Technologies Inc.
210 Evans Way
Somerville, NJ 08876

PHONE NUMBERS

Product Information : 1-908-526-8000
Emergency : 1-800-255-3924

COMPOSITION/INFORMATION ON INGREDIENTS

Mineral wool core with encapsulated fire resistant coating packaged in a sealed poly bag.

HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

* No hazard but dust or particles from broken bag may be possible skin and eye irritant. Solid. *

Potential Health Effects:

EYE: Contact may cause irritation.

SKIN: Contact may cause irritation.

INGESTION: Not likely.

INHALATION: Irritation of the nose, throat, and lungs may result from over-exposure to dust from broken bag.

CHRONIC (CANCER) INFORMATION: Mineral wool from broken bags is a suspect carcinogen.

LONG TERM TOXIC EFFECTS: None known.

FIRST AID MEASURES

First Aid**INHALATION:** Remove to fresh air.**SKIN CONTACT:** Wash thoroughly.**EYE CONTACT:** Irrigate eyes with running water for at least 15 minutes. Get medical attention if irritation develops.**INGESTION:** None applicable.**FIRE FIGHTING MEASURES**

Not flammable.

EXTINGUISHING MEDIA..... Dry Chemical; Carbon Dioxide; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES:..... As for surrounding fire.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

HANDLING AND STORAGE

Store under ambient conditions. No special handling required.

EXPOSURE CONTROLS/PERSONAL PROTECTION**EYE PROTECTION REQUIREMENTS:**..... Safety glasses/goggles.**SKIN PROTECTION REQUIREMENTS:** Gloves.**RESPIRATOR REQUIREMENTS:** None.**VENTILATION REQUIREMENTS:**..... If needed, use local exhaust ventilation to keep airborne concentrations below the TLV.**Exposure Guidelines****Exposure Limits****PEL(OSHA)** : Particulates (Not Otherwise Classified) 15 mg/m³, 8 Hr. TWA, total dust 5 mg/m³, 8 Hr. TWA, respirable dust**TLV (ACGIH):** None Established**PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL FORM Solid

SPECIFIC GRAVITY 0.1

PERCENT VOLATILES 0

SOLUBILITY IN WATER..... Very slight

STABILITY AND REACTIVITY

STABILITY: This is a stable material.

CONDITIONS TO AVOID None.

HAZARDOUS POLYMERIZATION:..... Will not occur.

INCOMPATIBILITIES:..... None special.

TOXICOLOGICAL INFORMATION

Mixture not tested but based on components:

Broken bags may emit dust that is irritating to skin, eyes and respiratory passages.

Mineral wool is designated as a carcinogen by IARC, ACGIH and NTP.

ECOLOGICAL INFORMATION

No data.

DISPOSAL CONSIDERATIONS

Waste Disposal:

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

TRANSPORTATION INFORMATION

DOT – not regulated.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status: Article.

Section 313 Supplier Notifications.

This product contains no toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

OTHER INFORMATION

NPCA-HMIS Rating

Health : 0

Flammability : 0

Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

STATE RIGHT-TO-KNOW LAWS

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated. While we do not specifically analyze these products, or the raw materials used in their manufacture, for substances on various state hazardous substances lists, to the best of our knowledge the products on this Material Safety Data Sheet contain no such substances except for those specifically listed below:

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS): NJTSRN-SSB.

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER: Contains substances know to the State of California to cause cancer.

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM: None known.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the data compiled. However, no representation, warranty, or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information.

Responsibility for MSDS :

Specified Technologies Inc.
210 Evans Way
Somerville, NJ 08876 USA



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

SpecSeal® Firestop Putty
 Phenol Polymer & Alumina Mixture
 None
 Sealant
 Other than Relevant Use

TRADE/MATERIAL NAME:
 CHEMICAL NAMES:
 SYNONYMS:
 RELEVANT USE of the SUBSTANCE:
 USES ADVISED AGAINST:

SUPPLIER/MANUFACTURER'S NAME (USA/Canada): **Specified Technologies, Inc.**
 Address: 210 Evans Way,
 Somerville, New Jersey 08876
 (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
 U.S., Canada: 1-800-255-3924 (24 hrs)
 International: +1-813-248-0585 (Collect-24 hrs)

Business Phone:
 Emergency Phone:

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Cat. 2, Germ Cell Mutagen Cat. 2, Acute Dermal Toxicity Cat. 5, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Skin Sensitization Cat. 1B, STOT Re Cat. 2

Signal Word: Warning

Hazard Statement Codes: H351, H341, H303, H315, H319, H317, H373

Precautionary Statement Codes: P201, P202, P260, P271, P272, P280, P308 + P313, P305 + P351 + P338, P337 + P313, P302 + P352, P333 + P313, P362 + P364, P312, P321, P403 + P233 + P405, P501

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

EMERGENCY OVERVIEW: Product Description: This product is a red, putty-like solid with a mild odor. **Health Hazards:** May be harmful if accidentally ingested. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume if heated may also cause irritation. Prolonged skin contact may cause irritation. Skin contact may also cause skin sensitization due to Formaldehyde content. This product contains a two known human carcinogens in trace amounts. In addition, the Phenol component may promote the development of skin cancer in the presence of other known carcinogens (by skin contact). The trace Formaldehyde component is considered a possible mutagen. **Flammability Hazards:** This product is formulated to be non-flammable and non-combustible. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., aluminum, carbon, sulfur, and nitrogen oxides, phenol, formaldehyde, aldehydes, ketones and acids, formic acid, methanol and butene monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** This product has not been tested for potential hazards if released to the environment. All release should be avoided. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Aluminum Trihydrate	21645-51-2	Listed	1-17	KE-00980	Listed	50-60%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2A Hazard Codes: H319
Proprietary Polymer		Listed	Proprietary	Proprietary	Listed	20-30%	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Formaldehyde Polymer with Ammonia and Phenol	35297-54-2	Listed	Not Listed	KE-17082	Listed	10-15%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Acute Oral Toxicity Cat. 5, Skin Sensitization Cat. 1B, STOT Re Cat. 3 Hazard Codes: H303, H317, H373
Phenol	108-95-2	Listed	3-381	KE-28209	Listed	1-3%	GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Mutagenic Cat. 2, Acute Oral Toxicity Cat. 3, Acute Dermal Toxicity Cat. 3, Acute Inhalation Toxicity Cat. 3, Skin Corrosion Cat. 1B, STOT RE Cat. 2 Hazard Codes: H341, H301 + H311 + H331, H314, H373
Sulfuric Acid Compound with Graphite	12777-87-6	Not Listed	Not Listed	KE-32585	Listed	2-5%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2 Hazard Codes: H351i
Crystalline Silica	14808-60-7	Listed	1-548	KE-29983	Listed	Trace	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2 Hazard Statement Codes: H350, H373
Formaldehyde	50-00-0	Listed	2-482	KE-17074	Listed	Trace	GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2, Acute Oral Toxicity Cat. 3, Acute Dermal Toxicity Cat. 3, Acute Inhalation Toxicity Cat. 3, Skin Corrosion Cat. 1B, Skin Sensitization Cat. 1 Hazard Codes: H351, H301 + H311 + H331, H314, H317
Water and Other Trace Ingredients						Balance	Classification Not Applicable
See Section 16 for full text of Classification							

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 160C - 320F.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., aluminum, carbon, sulfur, and nitrogen oxides, phenol, formaldehyde, aldehydes, ketones and acids, formic acid, methanol and butene monomers).

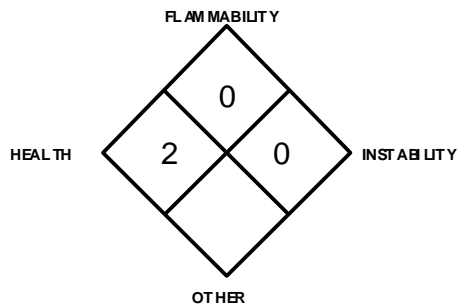
Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire

responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polypads.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Containers should be grounded and separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and "NO SMOKING" signs in storage and use areas as appropriate. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Do not store above 55°C (131°F)

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Aluminum Trihydrate	21645-51-2	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 4 mg/m ³ (inhalable fraction); 1.5 mg/m ³ (respirable fraction) DFG MAK Pregnancy Risk Classification: D
Crystalline Silica (Quartz)	14808-60-7	0.025 (resp. fract.)	NE	30 mg/m ³ (total dust) % SO ₂ + 2 0.1 (vacated 1989 PEL) 250 mppcf (resp. dust) % SiO ₂ + 5 or 10 mg/m ³ (resp. dust) % SO ₂ + 2	0.05 (resp. dust)	NE	50, Ca	See Pocket Guide App. A	Carcinogen: IARC-1, MAK-1 (respirable fraction), NIOSH-Ca, NTP-K (respirable fraction), TLV-A2

NE: Not Established. Ca: Carcinogen See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

Workplace Exposure Limits/Control Parameters (continued):

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Formaldehyde	50-00-0	SEN	0.37 (ceiling)	0.75 ppm	2 ppm	0.016 ppm	0.1 ppm, 15 min.	20 ppm (Ca)	DFG MAKs: TWA = 0.37 PEAK = 2•MAK 15-min average value, 1-hr interval, 4 per shift; 1 (ceiling) Danger of Sensitization of the Skin DFG MAK Germ Cell Mutagen Category: 5 DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-B1, IARC-1, MAK-4, NIOSH-Ca, NTP-K, OSHA-Ca, TLV-A2
Formaldehyde Polymer with Ammonia and Phenol	35297-54-2	NE	NE	NE	NE	NE	NE	NE	NE
Phenol	108-95-2	19 (skin)	Skin	19 (skin)	Skin	19 (skin)	60 (skin) 15 min.	25 ppm	DFG MAK: Skin Carcinogen: EPA-I, EPA-D, IARC-3, MAK- 3B, TLV-A4
Proprietary Polymer		NE	NE	NE	NE	NE	NE	NE	NE
Sulfuric Acid Compound with Graphite	12777-87-6	NE	NE	NE	NE	NE	NE	NE	NE

NE: Not Established. Ca: Carcinogen NIC: Notice of Intended Change DSEN: May Cause Dermal Sensitization. This notation is used to indicate the potential for dermal sensitization resulting from the interaction of an absorbed agent and ultraviolet light (i.e. photosensitization) RSEN: May Cause Respiratory Sensitization SEN: Confirmed Potential Worker Sensitization as a Result of Dermal Contact and/or Inhalation Exposure. Based on the Weight of Scientific Evidence See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM HYDROXIDE:

Australia: TWA = 2 mg(Al)/m³, JUL 2008
 Belgium: TWA = 2 mg(Al)/m³, MAR 2002
 Finland: TWA = 2 mg(Al)/m³, NOV 2011
 France: VME = 2 mg(Al)/m³, FEB 2006
 Korea: TWA = 2 mg(Al)/m³, 2006
 New Zealand: TWA = 2 mg(Al)/m³, JAN 2002
 Russia: TWA = 6 mg/m³, JUN 2003
 Sweden: TWA = 1 mg(Al)/m³, JUN 2005
 Switzerland: MAK-W = 3 mg/m³ (resp. dust), JAN 2011
 United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007
 In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CRYSTALLINE SILICA:

Australia: TWA = 0.1 mg/m³, JUL 2008
 Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
 Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
 Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
 Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
 Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
 France: VME = 0.1 mg/m³, (resp), FEB 2006
 Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
 Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
 Korea: TWA = 0.1 mg/m³, 2006
 Mexico: TWA = 0.1 mg/m³ (respirable), 2004
 The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
 New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002
 Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
 Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
 Peru: TWA = 0.05 mg/m³, JUL 2005
 Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
 Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
 Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
 Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
 Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
 United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
 In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

FORMALDEHYDE:

ARAB Republic of Egypt: TWA = 2 ppm (3 mg/m³), JAN 1993
 Australia: TWA = 1 ppm (1.2 mg/m³), STEL = 2 ppm (2.5 mg/m³), Carcinogen, JUL 2008
 Austria: MAK-TMW = 0.5 ppm (0.6 mg/m³); KZW = 0.5 ppm (0.6 mg/m³), skin, sen, 2007
 Belgium: STEL = 0.3 ppm (0.38 mg/m³), MAR 2002
 Denmark: CL = 0.3 ppm (0.4 mg/m³), carc, MAY 2011
 Finland: TWA = 0.3 ppm (0.37 mg/m³), CL = 1 ppm (1.2 mg/m³), NOV 2011
 France: VME = 0.5 ppm, VLE 1 ppm, C3 Carcinogen, FEB 2006
 Germany: MAK = 0.3 ppm (0.37 mg/m³), 2011
 Hungary: TWA = 0.6 mg/m³, STEL 0.6 mg/m³, Skin, SEP 2000

FORMALDEHYDE (continued):

Iceland: TWA = 0.3 ppm (0.4 mg/m³), STEL 1 ppm (1.2 mg/m³), Sen, NOV 2011
 Japan: OEL = 0.1 ppm (0.12 mg/m³), 2A Carc, A2 Sen, s1 Sen, MAY 2012
 Japan: OEL = 0.2 ppm (0.24 mg/m³), MAY 2012
 Korea: TWA = 1 ppm (1.5 mg/m³), STEL = 2 ppm (3 mg/m³), 2006
 Mexico: PEAK = 2 ppm (3 mg/m³), 2004
 The Netherlands: MAC-TGG = 1.5 mg/m³, 2003
 New Zealand: CL = 1 ppm (1.2 mg/m³), sen, JAN 2002
 Norway: TWA = 0.5 ppm (0.6 mg/m³), JAN 1999
 Peru: TWA STEL = 0.3 ppm (0.37 mg/m³), JUL 2005
 The Philippines: TWA = 5 ppm (6 mg/m³), JAN 1993
 Poland: MAC(TWA) = 0.5 mg/m³, MAC(STEL) = 1 mg/m³, JAN 1999
 Russia: STEL = 0.5 mg/m³, Skin, JUN 2003
 Sweden: TWA = 0.5 ppm (0.6 mg/m³), CL = 1 ppm (1.2 mg/m³), Carcinogen, Sen, JUN 2005
 Switzerland: MAK-W = 0.3 ppm (0.37 mg/m³), KZG-W = 0.6 ppm (0.74 mg/m³), Carc 3, Sen, JAN 2011
 Thailand: TWA = 3 ppm, STEL = 5 ppm, JAN 1993
 Turkey: TWA = 5 ppm (6 mg/m³), JAN 1993
 United Kingdom: TWA = 2 ppm (2.5 mg/m³); STEL 2 ppm (2.5 mg/m³), OCT 2007
 In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PHENOL:

ARAB Republic of Egypt: TWA = 5 ppm (19 mg/m³), Skin, JAN 1993
 Australia: TWA = 1 ppm (4 mg/m³), JUL 2008
 Austria: MAK-TMW = 2 ppm (7.8 mg/m³), skin, 2007
 Denmark: TWA = 2 ppm (7.8 mg/m³), Skin, MAR 2002
 Denmark: TWA = 1 ppm (4 mg/m³), skin, MAY 2011
 EC: TWA = 7.8 mg/m³ (2 ppm), skin, JUN 2000
 Finland: TWA = 2 ppm (8 mg/m³), STEL = 4 ppm (16 mg/m³), skin, NOV 2011
 France: VME = 2 ppm (7.8 mg/m³), Skin, FEB 2006
 Hungary: TWA = 7.8 mg/m³, STEL = 78 mg/m³, Skin, SEP 2000
 Iceland: TWA = 1 ppm (4 mg/m³), skin, NOV 2011
 Japan: OEL = 5 ppm (19 mg/m³), skin, MAY 2012
 Korea: TWA = 5 ppm (19 mg/m³), skin, 2006
 Mexico: TWA = 5 ppm (19 mg/m³); STEL = 10 ppm (38 mg/m³) (skin), 2004
 The Netherlands: MAC-TGG = 8 mg/m³, Skin, 2003
 New Zealand: TWA = 5 ppm (19 mg/m³), skin, JAN 2002
 Norway: TWA = 1 ppm (4 mg/m³), JAN 1999
 Peru: TWA = 5 ppm (19 mg/m³), JUL 2005
 The Philippines: TWA = 5 ppm (10 mg/m³), Skin, JAN 1993
 Poland: MAC(TWA) = 10 mg/m³, MAC(STEL) = 20 mg/m³, JAN 1999
 Russia: TWA = 0.3 mg/m³, STEL = 1 mg/m³, Skin, JUN 2003
 Sweden: TWA = 1 ppm (4 mg/m³); STEL = 2 ppm (8 mg/m³), Skin, JUN 2005
 Switzerland: CL 5 ppm (19 mg/m³), skin, JAN 2011
 Thailand: TWA = 5 ppm (19 mg/m³), JAN 1993
 Turkey: TWA = 5 ppm (19 mg/m³), Skin, JAN 1993
 United Kingdom: TWA = 2 ppm (7.8 mg/m³), skin, OCT 2007
 In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Putty-like

MOLECULAR FORMULA: Mixture.

ODOR: Minimal.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not available.

VAPOR DENSITY (air = 1): Not available.

EVAPORATION RATE (n-BuAc = 1): > 1

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

COLOR: Read.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: Not available.

FLASH POINT: Not available.

BOILING POINT: Not available.

SPECIFIC GRAVITY (water = 1): 1.49

CARB VOC: Not available.

SCAQMD (U.S. EPA Method 24): Not available.

SOLUBILITY IN SOLVENTS: Not available.

pH: Not available.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, carbon, sulfur, and nitrogen oxides, phenol, formaldehyde, aldehydes, ketones and acids, formic acid, methanol and butene monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of fumes or vapors if heated may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. The trace Crystalline Silica and Formaldehyde components are known human carcinogens. Due to the form of this product, this hazard is not as significant, however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin). Due to the Phenol component, repeated or prolonged skin contact can lead to a characteristic darkening of skin and urine (ochronosis).

Skin Absorption: The Phenol component and trace Formaldehyde component can be absorbed through intact skin. Phenol in all forms (solid, solutions and vapor) is readily absorbed through the skin and can cause harmful effects if a large area of the skin is involved or if contact is prolonged. Due to the small amount of each of these materials, the possibility of adverse effects is not expected to be significant however, skin contact should be avoided. Formaldehyde and Phenol can cause sensitization effects as described under 'Sensitization Effect's'.

11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

OTHER HEALTH EFFECTS: Phenol can promote the development of skin cancer when applied with known carcinogens. In animal studies involving Phenol, limited information suggests that repeated (up to 28 days), relatively low exposures to phenol may cause harmful effects on several body systems, including the blood and immune system, the nervous system, the kidneys and the liver.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system.

Eye contact may cause mechanical irritation. Eye contact with fumes can cause irritation. May be harmful if swallowed.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin) or may be harmful due to Phenol content. Due to Formaldehyde content, this product may cause skin sensitization in susceptible individuals. This product contains trace amounts of Crystalline Silica and Formaldehyde, known human carcinogens.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

ALUMINUM TRIHYDRATE:

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia

TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase

TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical

TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus

TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus

TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia

TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes

TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus

TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified

TDLo (Intraperitoneal-Rat) 150 mg/kg

TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron

TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia

TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

PHENOL:

LDLo (Oral-Human) 14 gm/kg: Behavioral: muscle weakness; Lungs, Thorax, or Respiration: cyanosis

LDLo (Oral-Human) 140 mg/kg: Behavioral: hallucinations, distorted perceptions; Skin and Appendages: sweating

LDLo (Oral-Infant) 10 mg/kg: Behavioral: muscle weakness; Lungs, Thorax, or Respiration: cyanosis

TDLo (Parenteral-Man) 105.3 mg/kg: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Lungs, Thorax, or Respiration: dyspnea; Kidney/Ureter/Bladder: renal function tests depressed

TDLo (Unreported-Man) 5714 µg/kg: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified

IC₅₀ (In vitro-Human Liver) 3.02 mmol/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human Liver) 9.67 mmol/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human Liver Tumor) 10 mmol/L/24 hours: In Vitro Toxicity Studies: cell protein synthesis

IC₅₀ (In vitro-Human Liver Tumor) 3.47 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

PHENOL (continued):

IC₅₀ (In vitro-Human Liver Tumor) 14.66 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human HeLa Cell) 100 mg/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.)

Open Irritation Test (Skin-Rabbit) 535 mg: Severe

Standard Draize Test (Skin-Rabbit) 100 mg: Mild

Standard Draize Test (Eye-Rabbit) 5 mg: Severe

Standard Draize Test (Eye-Rabbit) 400 µL/30 seconds: Severe

Rinsed with Water (Eye-Rabbit) 5 mg/30 seconds: Mild

LC₅₀ (Inhalation-Rat) 316 mg/m³

LC₅₀ (Inhalation-Rat) 316 mg/m³/4 hours

LC₅₀ (Inhalation-Mouse) 177 mg/m³

LC₅₀ (Inhalation-Mouse) 177 mg/m³/4 hours

LD₅₀ (Oral-Rat) 317 mg/kg: Behavioral: convulsions or effect on seizure threshold

LD₅₀ (Oral-Rat) 512 mg/kg

LD₅₀ (Oral-Mouse) 270 mg/kg

LD₅₀ (Oral-Mammal-Species Unspecified) 500 mg/kg

LD₅₀ (Skin-Rat) 1500 mg/kg

LD₅₀ (Skin-Rat) 669 mg/kg: Behavioral: tremor; Kidney/Ureter/Bladder: hematuria; Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

LD₅₀ (Skin-Rabbit) 630 mg/kg

LD₅₀ (Intraperitoneal-Rat) 127 mg/kg

LD₅₀ (Intraperitoneal-Mouse) 180 mg/kg

LD₅₀ (Subcutaneous-Rat) 300 mg/kg

LD₅₀ (Subcutaneous-Mouse) 344 mg/kg

LD₅₀ (Intravenous-Mouse) 112 mg/kg: Behavioral: tremor

IC₁₀ (In vitro-Rat Liver) 1.12 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₁₀ (In vitro-Rat Lung) 0.03 gm/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity (prelabeled cells): release of radioactive isotopes ([⁵¹Cr], [³H]-thymidine, [³H]-proline, [³⁵S]- or [⁷⁵Se]-methionine, 5-[¹²⁵I]-2-deoxy-uridine) or fluorescent dyes (bis-carboxyethyl-carboxyfluorescein (BCECF) or calcein-AM) TIVIEQ

IC₁₀ (In vitro-Rat Lung) 0.2 gm/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₁₀ (In vitro-Chicken Neurons) 7470 µmol/L/21 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₁₀ (In vitro-Chicken Neurons) 1862 µmol/L/21 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₁₀ (In vitro-Chicken Neurons) 614 µmol/L/20 hours: In Vitro Toxicity Studies: cell viability (lysosomal damage): neutral red assay etc.

IC₅₀ (In vitro-Rat Liver) 3.3 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Rat Lung) 1 gm/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Rat Lung) 0.36 gm/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity (prelabeled cells): release of radioactive isotopes ([⁵¹Cr], [³H]-thymidine, [³H]-proline, [³⁵S]- or [⁷⁵Se]-methionine, 5-[¹²⁵I]-2-deoxy-uridine) or fluorescent dyes (bis-carboxyethyl-carboxyfluorescein (BCECF) or calcein-AM)

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

PHENOL (continued):

IC₅₀ (*In vitro*-Mouse Fibroblast) 2.47 mmol/L/24 hours: *In Vitro* Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc.

IC₅₀ (*In vitro*-Mouse Fibroblast) 9.91 mmol/L/24 hours: *In Vitro* Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc.

IC₅₀ (*In vitro*-Chicken Neurons) 3642 µmol/L/20 hours: *In Vitro* Toxicity Studies: cell viability (lysosomal damage): neutral red assay etc.

IC₅₀ (*In vitro*-Non-Mammalian Species-Fibroblast) 10.4 mmol/L/24 hours: *In Vitro* Toxicity Studies: cell counting

IC₇₅ (*In vitro*-Rat Lung) 1.7 gm/L/24 hours: *In Vitro* Toxicity Studies: cell membrane integrity (prelabeled cells): release of radioactive isotopes [⁵¹Cr], [³H]-thymidine, [³H]-proline, [³⁵S]- or [⁷⁵Se]-methionine, 5-[¹²⁵I]-2-deoxy-uridine) or fluorescent dyes (bis-carboxyethyl-carboxyfluorescein (BCECF) or calcein-AM)

IC₇₅ (*In vitro*-Rat Lung) 2.8 gm/L/24 hours: *In Vitro* Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc.

LDLo (Oral-Dog) 500 mg/kg

LDLo (Oral-Cat) 80 mg/kg

LDLo (Oral-Rabbit) 420 mg/kg

LDLo (Subcutaneous-Cat) 80 mg/kg

LDLo (Subcutaneous-Rabbit) 620 mg/kg

LDLo (Subcutaneous-Guinea Pig) 450 mg/kg

LDLo (Subcutaneous-Frog) 75 mg/kg

LDLo (Subcutaneous-Frog) 290 mg/kg

LDLo (Intraperitoneal-Rabbit) 620 mg/kg

LDLo (Intraperitoneal-Guinea Pig) 300 mg/kg

LDLo (Intravenous-Rabbit) 180 mg/kg

LDLo (Parenteral-Frog) 290 mg/kg: Peripheral Nerve and Sensation: spastic paralysis with or without sensory change; Behavioral: convulsions or effect on seizure; threshold Cardiac: other changes

LDLo (Unreported-Dog) 200 mg/kg

LDLo (Unreported-Cat) 250 mg/kg

LDLo (Unreported-Rabbit) 150 mg/kg

TD (Skin-Mouse) 4000 mg/kg/24 weeks-intermittent: Tumorigenic: neoplastic by RTECS criteria; Skin and Appendages: tumors

TDLo (Oral-Rat) 22,750 mg/kg/13 weeks-continuous: Behavioral: food intake (animal), fluid intake; Nutritional and Gross Metabolic: weight loss or decreased weight gain

TDLo (Oral-Rat) 300 mg/kg: female 6-15 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

TDLo (Oral-Rat) 1200 mg/kg: female 6-15 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Oral-Rat) 3600 mg/kg: female 6-15 day(s) after conception: Reproductive: Maternal Effects: other effects; Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Oral-Rat) 1200 mg/kg: female 6-15 day(s) after conception: Reproductive: Maternal Effects: other effects

TDLo (Oral-Rat) 300 mg/kg: female 6-15 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Oral-Mouse) 2300 mg/kg: female 6-15 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Effects on Embryo or Fetus: fetal death

TDLo (Oral-Mouse) 2600 mg/kg: female 6-15 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Oral-Mouse) 4 gm/kg: female 6-15 day(s) after conception: Reproductive: Specific Developmental Abnormalities: musculoskeletal system

TDLo (Oral-Mouse) 2800 mg/kg: female 6-15 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus); Specific Developmental Abnormalities: craniofacial (including nose and tongue)

TDLo (Oral-Mouse) 2800 mg/kg: female 6-15 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus); Specific Developmental Abnormalities: craniofacial (including nose and tongue)

TDLo (Oral-Mouse) 265 mg/kg/12 hours: Blood: changes in bone marrow (not otherwise specified)

TDLo (Oral-Mouse) 174 mg/kg/28 days-continuous: Brain and Coverings: other degenerative changes; Blood: changes in erythrocyte (RBC) count; Immunological Including Allergic: decreased immune response

TDLo (Oral-Mouse) 2800 mg/kg/10 days-intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Related to Chronic Data: death

TDLo (Oral-Mouse) 1800 mg/kg/10 days-intermittent: Kidney/Ureter/Bladder: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

PHENOL (continued):

TDLo (Oral-Mouse) 2800 mg/kg/10 days-intermittent: Behavioral: tremor, ataxia

TDLo (Skin-Mouse) 329 mg/kg/30 minutes: Skin and Appendages: primary irritation (after topical exposure); Biochemical: Metabolism (Intermediary): other, effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 88.9 µL/kg: Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 16 gm/kg/40 weeks-intermittent: Tumorigenic: carcinogenic by RTECS criteria; Skin and Appendages: tumors

TDLo (Intraperitoneal-Rat) 650 mg/kg/17 days-intermittent: Blood: other changes

TDLo (Intraperitoneal-Rat) 600 mg/kg: female 12-14 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Intraperitoneal-Mouse) 300 mg/kg: Nutritional and Gross Metabolic: body temperature decrease

TDLo (Intraperitoneal-Mouse) 300 mg/kg: Immunological Including Allergic: hypersensitivity delayed

TCLo (Inhalation-Rat) 110 mg/m³/4 hours: Behavioral: somnolence (general depressed activity); Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: proteases

TCLo (Inhalation-Rat) 150 µg/m³/8 hours/26 weeks-intermittent: Kidney/Ureter/Bladder: changes in tubules (including acute renal failure, acute tubular necrosis); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases

TCLo (Inhalation-Rat) 5 mg/m³/4 hours/17 weeks-intermittent: Liver: liver function tests impaired; Endocrine: effect on menstrual cycle; Blood: changes in leukocyte (WBC) count

TCLo (Inhalation-Rat) 100 µg/m³/24 hours/61 days-continuous: Behavioral: muscle contraction or spasticity; Blood: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase

TCLo (Inhalation-Rat) 0.5 mg/m³/4 hours/122 days-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: multiple enzyme effects

TCLo (Inhalation-Mouse) 15 ppm/6 minutes: Lungs, Thorax, or Respiration: respiratory depression

LCLo (Inhalation-Rat) 232 mg/m³/4 hours

LCLo (Inhalation-Mouse) 110 mg/m³/4 hours

Mutation Test Systems-Not Otherwise Specified (Human HeLa cell) 17 mg/L

Mutation Test Systems-Not Otherwise Specified (Human Lymphocyte) 5 µmol/L

DNA Inhibition (Human HeLa Cell) 1 mmol/L

Sister Chromatid Exchange (Human Lymphocyte) 5 µmol/L

Cytogenetic Analysis (Human Cells-Not Otherwise Specified) 300 µmol/L/30 hours

Mutation in Microorganisms (Bacteria-*Salmonella typhimurium*) 40 µmol/plate

Mutation in Microorganisms (Mouse Lymphocyte) 300 mg/L

Mutation in Microorganisms (Microorganism-Not Otherwise Specified) 200 mg/L/8 hours

Sex Chromosome Loss and Non-Disjunction (Insect-*Drosophila melanogaster* Ovary) 100 ppm

Gene Conversion and Mitotic Recombination (Mold-*Aspergillus nidulans*) 15 µmol/L

DNA Damage (Mammal-Species Unspecified Lymphocyte) 250 mmol/L

Micronucleus Test (Oral-Mouse) 265 mg/kg

Micronucleus Test (Intraperitoneal-Mouse) 265 mg/kg

Micronucleus Test (Hamster Lung) 4 mmol/L

Micronucleus Test (Hamster Ovary) 175 mg/L

Micronucleus Test (Hamster Embryo) 500 mg/L/4 hours

DNA Inhibition (Oral-Mouse) 20 mg/kg

DNA Inhibition (Mouse Lymphocyte) 800 µmol/L

DNA Inhibition (Hamster Lung) 1900 µmol/L

Cytogenetic Analysis (Multiple Routes-Fish-Not Otherwise Specified) 300 nL/L

Cytogenetic Analysis (Hamster Ovary) 2 gm/L

Cytogenetic Analysis (Hamster Embryo) 100 µmol/L

Unscheduled DNA Synthesis (Oral-Rat) 4 gm/kg

Unscheduled DNA Synthesis (Hamster Embryo) 3 µmol/L

DNA Damage (Mouse Lymphocyte) 1500 µmol/L

Mutation Test Systems-Not Otherwise Specified (Mouse Cells-Not Otherwise Specified) 2500 µmol/L

Mutation Test Systems-Not Otherwise Specified (Rabbit Bone Marrow) 250 µmol/L

Mutation in Mammalian Somatic Cells (Mouse Lymphocyte Mouse Lymphocyte) 1890 µmol/L

Mutation in Mammalian Somatic Cells (Hamster Embryo) 3 mmol/L

Morphological Transformation (Hamster Embryo) 10 µmol/L

Sister Chromatid Exchange (Hamster Ovary) 300 mg/L

Sister Chromatid Exchange (Hamster Embryo) 1 mmol/L

POLYBUTENE:

TCLo (Inhalation-Rat) 700 mg/m³/7 hours/2 weeks-intermittent: Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Eye contact with fumes may cause irritation. Prolonged skin contact may cause irritation.

SENSITIZATION OF PRODUCT: The Phenol and trace Formaldehyde components are skin sensitizers and the formaldehyde component is also a possible respiratory sensitizer. Formaldehyde causes occupational skin sensitization. Once a person is sensitized, contact with even a small amount of a formaldehyde solution can cause outbreaks of dermatitis with symptoms such as redness, rash, itching and swelling. This reaction can spread from the hands or arms to the face and body. Many cases of allergic contact dermatitis have been associated with exposure to formaldehyde formulations.

11. TOXICOLOGICAL INFORMATION (Continued)

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CRYSTALLINE SILICA: ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen)

FORMALDEHYDE: ACGIH-TLV-A2 (Suspected Human Carcinogen); EPA-B1 (Probable Human Carcinogen-Limited Evidence of Carcinogenicity from Epidemiological Studies), IARC-1 (Carcinogenic to Humans); MAK-4 (Substances with Carcinogenic Potential for Which Genotoxicity Plays No or at Most a Minor Role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen); OSHA-Ca (Carcinogen Defined with No Further Categorization)

PHENOL: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); EPA-I (Data are Inadequate for an Assessment of Human Carcinogenic Potential); EPA-D (Not Classifiable as to Human Carcinogenicity); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-3B (Substances for Which in vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification of the substance in one of the other categories. Further studies are required before a final classification can be made.)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: This product is not expected or reported to cause human mutagenic, embryotoxic, teratogenic or reproductive toxicity effects. The following gives information on possible effects from components.

Mutagenicity: Formaldehyde is considered mutagenic, based on positive results (e.g. chromosomal aberrations in lung cells) observed in studies with live animals. In occupational exposure studies, which are limited by such problems as low numbers of workers studied and mixed exposures, both positive and negative results (micronuclei, sister chromatid exchanges (SCEs), chromosome aberrations in lymphocytes or cheek and nose cells) and a negative result (abnormal sperm) were obtained.(19,44,46,81) However, positive results (SCEs in lymphocytes, DNA-protein crosslinks in lymphocytes) were obtained in 2 reasonably well-conducted studies.

Embryotoxicity/Teratogenicity: No component is known to cause human embryotoxicity or teratogenicity. Animal studies are inconclusive or have not shown embryotoxicity or teratogenicity.

Reproductive Toxicity: There is insufficient evidence to determine if Formaldehyde causes reproductive toxicity in humans. Despite limitations, the few animal studies available do not suggest that Formaldehyde exposure will affect fertility.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

14. TRANSPORTATION INFORMATION (Continued)

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows.

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Formaldehyde	Yes	Yes	Yes
Phenol	Yes	Yes	Yes

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): Formaldehyde: 500 lb (27.2 kg); Phenol: 500 lb (27.2 kg)

U.S. CERCLA Reportable Quantity (RQ): Formaldehyde: 100 lb (45.4 kg); Phenol: 1000 lb (454 kg)

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Crystalline Silica and Formaldehyde (gas) components are on the California Proposition 65 lists. **WARNING!** This product contains compounds known to the State of California to cause Cancer.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: The Phenol and Formaldehyde components are on the CEPA Priorities Substances 2 List.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic and Mutagenic Effect, Irritation, Skin Sensitization) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), or are not listed, per information in Section 2.

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory, are excepted, or are not listed, per information in Section 2.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory, or are not listed, per information in Section 2.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** MAY BE HARMFUL BY INGESTION AND SKIN CONTACT. MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. PROLONGED SKIN CONTACT MAY CAUSE IRRITATION. MAY CAUSE SKIN SENSITIZATION IN PERSONS SUSCEPTIBLE TO FORMALDEHYDE. CONTAINS TRACE AMOUNT OF CRYSTALLINE SILICA AND FORMALDEHYDE, KNOWN HUMAN CARCINOGENS. Avoid breathing fumes or vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures.

16. OTHER INFORMATION (Continued)

LABELING (Precautionary Statements) ANSI LABELING (continued): FIRST-AID: In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Germ Cell Mutagen Category 2, Acute Dermal Toxicity Category 5, Eye Irritation Category 2A, Skin Irritation Category 2, Skin Sensitization Category 1, Specific Target Organ Toxicity Repeated Exposure Category 2

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H341: Suspected of causing genetic effects. H313: May be harmful in contact with skin. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P260: Do not breathe vapors/fume. P271: Use only outdoors or in a well-ventilated area. P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear protective gloves, clothing, eye protection and face protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention. P312: Call a POISON CENTER or doctor if you feel unwell. P362 + P364: Take off contaminated clothing and wash it before reuse. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

COMPONENT CLASSIFICATION:

Labeling and Classification Full Text under GHS:

Aluminum Trihydrate: This is a self-classification.

Classification: Eye Irritation Category 2A

Hazard Statements: H319: Causes serious eye irritation.

Crystalline Silica: This is a self-classification.

Classification: Carcinogenic Category 1, Specific Target Organ Toxicity (Inhalation-Lungs) Repeated Exposure Category 2

Hazard Statements: H350: May cause cancer. H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

Formaldehyde: This is a published classification.

Classification: Carcinogenic Category 2, Acute Oral Toxicity Category 3, Acute Dermal Toxicity Category 3, Acute Inhalation Toxicity Category 3, Skin Corrosion Category 1B, Skin Sensitization Category 1

Hazard Statements: H351: Suspected of causing cancer. H301 + H311 + H331: Toxic if swallowed, in contact with skin or if inhaled. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction.

Phenol: This is a self-classification.

Classification: Mutagenic Category 2, Acute Oral Toxicity Category 3, Acute Dermal Toxicity Category 3, Acute Inhalation Toxicity Category 3, Skin Corrosion Category 1B, Specific Target Organ Toxicity Repeated Exposure Category 2

Hazard Statements: H341: Suspected of causing genetic effects. H301 + H311 + H331: Toxic if swallowed, in contact with skin or if inhaled.

H314: Causes severe skin burns and eye damage. H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

DATE OF PRINTING: May 29, 2015

REVISION HISTORY: Addition of component.

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply.

DFG MAK Germ Cell Mutagen Categories (continued): 4 (continued): At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

DEFINITION OF TERMS (Continued)

EXPOSURE LIMITS IN AIR (continued):

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELS: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. **3 Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react. **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 1 (continued): Unstable Reactives: Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. **Organic Peroxides:** Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Instantaneous and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LC₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendations on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight.

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 1 (continued): Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3 (Water Reactivity):** Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure \geq 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I *Solids:* any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. *Liquids:* Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%) / cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.; **4 (Water Reactivity):** Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 and 1.2-explosive substances that have a mass explosion hazard or have a projected hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.)

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀, or TC, TCo, LCLo, and LCo:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. **RTECS:** Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BE:** ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TLM:** Median threshold limit. **log K_{ow} or log K_{oc}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **TC:** Transport Canada. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME: SpecSeal® Series SSS Sealant
CHEMICAL NAMES: Acrylic Polymer Mixture
SYNONYMS: None
RELEVANT USE of the SUBSTANCE: Sealant
USES ADVISED AGAINST: Other than Relevant Use
SUPPLIER/MANUFACTURER'S NAME (USA/Canada): Specified Technologies, Inc.
Address: 210 Evans Way,
Somerville, New Jersey 08876
Business Phone: (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
International: +1-813-248-0585 (Collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3

Signal Word: Warning

Hazard Statement Codes: H351, H319, H335

Precautionary Statement Codes: P201, P202, P261, P271, P280, P308 + P313, P305 + P351 + P338, P337 + P313, P304 + P340, P312, P321, P403 + P233 + P405, P501

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

EMERGENCY OVERVIEW: Product Description: This product is a red paste with a mild acrylic odor. **Health Hazards:** May be harmful if accidentally ingested. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume may also cause irritation. Brief skin contact is not expected to cause adverse effect. Prolonged skin contact may cause irritation. This product contains a known human carcinogen in trace amount; however, this hazard is not expected to be significant due to viscosity of the product. **Flammability Hazards:** This product is formulated to be non-flammable and non-combustible. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** This product has not been tested for potential hazards if released to the environment. All release should be avoided. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Acrylic Polymer		Not Determined	Not Determined	Not Determined	Not Determined	20-30%	Classification Not Applicable
Aluminum Trihydrate	21645-51-2	Listed	1-17	KE-00980	Listed	15-20%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2A Hazard Codes: H319
Ground Limestone	1317-65-3	Listed	Excepted as Mineral	KE-21996	Listed	10-18%	Classification Not Applicable
Glass Oxide	65997-17-3	Listed	Not Listed	KE-17630	Listed	8-12%	Classification Not Applicable

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2-propenenitrile	30396-85-1	Listed	6-419	KE-25121	Listed	1-3%	Classification Not Applicable
Sulfuric Acid Compound with Graphite	12777-87-6	Not Listed	Not Listed	KE-32585	Listed	1-3%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2 Hazard Codes: H351i
Proprietary Acrylic Copolymer in Aqueous Dispersion		Not Determined	Not Determined	Not Determined	Not Determined	1-2%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Acute Oral Toxicity Cat. 5 Hazard Codes: H3303
Crystalline Silica	14808-60-7	Listed	1-548	KE-29983	Listed	0.1-0.15%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2 Hazard Statement Codes: H350, H373
Water and Other Trace Ingredients						Balance	Classification Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 320C - 608F.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

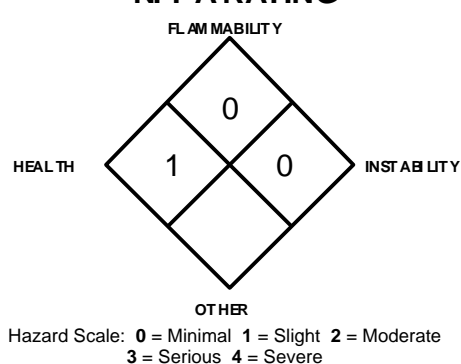
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

6. ACCIDENTAL RELEASE MEASURES (Continued)

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polypads.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Containers should be grounded and separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and “NO SMOKING” signs in storage and use areas as appropriate. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Do not store above 55°C (131°F)

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Aluminum Trihydrate	21645-51-2	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 4 mg/m ³ (inhalable fraction); 1.5 mg/m ³ (respirable fraction) DFG MAK Pregnancy Risk Classification: D
Crystalline Silica (Quartz)	14808-60-7	0.025 (resp. fract.)	NE	30 mg/m ³ (total dust) % SO ₂ + 2 0.1 (vacated 1989 PEL) 250 mppcf (resp. dust) % SiO ₂ + 5 or 10 mg/m ³ (resp. dust) % SO ₂ + 2	NE	0.05 (resp. dust)	NE	50	Carcinogen: IARC-1, MAK-1 (respirable fraction), NOSH-Ca, NTP-K (respirable fraction), TLV-A2
Glass Oxide	65997-17-3	NE	NE	NE	NE	NE	NE	NE	NE
Ground Limestone	1317-65-3	NE	NE	15 (total dust); 1 (resp. fract.)	NE	10 (total dust); 1 (resp. fract.)	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Workplace Exposure Limits/Control Parameters (continued):

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
2-Methyl-2-propenoic acid methyl ester polymer with 1,1-dichloroethene and 2-propenenitrile	25214-39-5	NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Acrylic Polymer		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Acrylic Copolymer in Aqueous Dispersion		NE	NE	NE	NE	NE	NE	NE	NE
Sulfuric Acid Compound with Graphite	12777-87-6	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM HYDROXIDE:

Australia: TWA = 2 mg(Al)/m³, JUL 2008
Belgium: TWA = 2 mg(Al)/m³, MAR 2002
Finland: TWA = 2 mg(Al)/m³, NOV 2011
France: VME = 2 mg(Al)/m³, FEB 2006
Korea: TWA = 2 mg(Al)/m³, 2006
New Zealand: TWA = 2 mg(Al)/m³, JAN 2002
Russia: TWA = 6 mg/m³, JUN 2003
Sweden: TWA = 1 mg(Al)/m³, JUN 2005
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CRYSTALLINE SILICA:

Australia: TWA = 0.1 mg/m³, JUL 2008
Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
France: VME = 0.1 mg/m³, (resp), FEB 2006
Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
Korea: TWA = 0.1 mg/m³, 2006
Mexico: TWA = 0.1 mg/m³ (respirable), 2004
The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002

CRYSTALLINE SILICA (continued):

Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
Peru: TWA = 0.05 mg/m³, JUL 2005
Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

GROUND LIMESTONE:

Belgium: TWA = 10 mg/m³, MAR 2002
Hungary: TWA = 10 mg/m³, SEP 2000
Japan: OEL = 2 mg/m³ (resp. dust), 84 mg/m³ (total dust), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³; STEL = 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Poland: MAC(TWA) dust = 10 mg/m³, JAN 1999
Russia: STEL = 6 mg/m³, JUN 2003
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (respirable dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste.

MOLECULAR FORMULA: Mixture.

ODOR: Mild acrylic.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

VAPOR PRESSURE: Not available.

COLOR: Red.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: 20

FLASH POINT: Not available.

BOILING POINT: > 100°C (> 212°F)

SPECIFIC GRAVITY (water = 1): 1.24

9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

VAPOR DENSITY (air = 1): Not available.

EVAPORATION RATE (*n*-BuAc = 1): > 1

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

CARB VOC: 0.4 wt % (calc.)

SCAQMD (U.S. EPA Method 24): 2.92 gm/L

SOLUBILITY IN SOLVENTS: Not available.

pH: Not available.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. The trace Crystalline Silica component is a known human carcinogen. Due to the form of this product, this hazard is not as significant as a powdered or solid products, however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin).

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system. Eye contact may cause mechanical irritation.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin).

This product contains Crystalline Silica, a known human carcinogen.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

ALUMINUM TRIHYDRATE:

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia

TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase

TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical

TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus

TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus

TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia

TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes

TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus

TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified

ALUMINUM TRIHYDRATE (continued):

TDLo (Intraperitoneal-Rat) 150 mg/kg

TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron

TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia

TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

GROUND LIMESTONE:

TDLo (Intravenous-Rat) 30 mg/kg: Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: changes in lung weight; Blood: other changes

TCLo (Inhalation-Rat) 84 mg/m³/4 hours/40 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis (interstitial); Liver: other changes; Kidney/Ureter/Bladder: other changes

TCLo (Inhalation-Rat) 250 mg/m³/2 hours/24 weeks-intermittent: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis)

PROPRIETARY ACRYLIC COPOLYMER IN AQUEOUS DISPERSION

LD₅₀ (Oral-Rat) > 2000 mg/kg

Slight Eye Irritant-Rabbit

Slight Skin Irritant-Rabbit

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Prolonged skin contact may cause irritation.



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

11. TOXICOLOGICAL INFORMATION (Continued)

SENSITIZATION OF PRODUCT: This product is not currently known to cause allergic skin or respiratory reaction.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CRYSTALLINE SILICA: ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided. The following aquatic toxicity data are available for one component.

PROPRIETARY ACRYLIC COPOLYMER IN AQUEOUS DISPERSION

LC₅₀ (Brachydano rerio) 96 hours = > 100 mg/L

EC₅₀ (Daphnia magna) 48 hours = > 100 mg/L

IC₅₀ (Algae) 92 hours = > 100 mg/L

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Crystalline Silica component is on the California Proposition 65 lists. **WARNING!** This product contains a compound known to the State of California to cause Cancer.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), or are not listed, per information in Section 2.

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory, are excepted, or are not listed, per information in Section 2.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory, or are not listed, per information in Section 2.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** MAY CAUSE MILD IRRITATION BY INHALATION AND EYE CONTACT. PROLONGED SKIN CONTACT MAY CAUSE IRRITATION. CONTAINS TRACE AMOUNT OF CRYSTALLINE SILICA, A KNOWN HUMAN CARCINOGEN. Avoid breathing fumes or vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H319: Causes serious eye irritation. H335: May cause respiratory irritation. Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P261: Avoid breathing vapors, fume. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, clothing, eye protection and face protection. P284: Wear respiratory protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention.

16. OTHER INFORMATION (Continued)

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION (continued):

Precautionary Statements (continued):

Response (continued): P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

COMPONENT CLASSIFICATION:

Labeling and Classification Full Text under GHS:

Aluminum Trihydrate: This is a self-classification.

Classification: Eye Irritation Category 2A

Hazard Statements: H319: Causes serious eye irritation.

Crystalline Silica: This is a self-classification.

Classification: Carcinogenic Category 1, Specific Target Organ Toxicity (Inhalation-Lungs) Repeated Exposure Category 2

Hazard Statements: H350: May cause cancer. H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

Proprietary Acrylic Polymer in Aqueous Dispersion: This is a self-classification.

Classification: Acute Oral Toxicity Category 5

Hazard Statements: H303: May be harmful if swallowed.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that will not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. **Oral Toxicity LD₅₀ Rat:** > 500-5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000-2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2-20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize = 26-100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50-500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200-1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5-2 mg/L. **3 Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5-8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1-50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20-200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05-0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class III B); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides).

DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 4 Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react. **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%) / cellulose mixture and the criteria for Packing Group I and II are not met. **Unstable Reactives:** Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. **Organic Peroxides:** Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 aqueous sodium chlorate solution (40%) / cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%) / cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 4 Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀, or TC, TCo, LCLo, and LCo:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. **NTP:** National Toxicology Program. **RTECS:** Registry of Toxic Effects of Chemical Substances. **IARC** and **NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI:** ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as the worker with inhalation exposure to the TLV.

DEFINITION OF TERMS (Continued)

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLM: Median threshold limit. log K_{ow} or log K_{oc}: Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:
EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT, CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

STI Thermal Barrier Wrap

TRADE/MATERIAL NAME: Coated Mineral Wool
CHEMICAL NAMES: None
SYNONYMS: Insulation Fire Barrier
RELEVANT USE of the SUBSTANCE: Other than Relevant Use
USES ADVISED AGAINST:
SUPPLIER/MANUFACTURER'S NAME (USA/Canada): Specified Technologies, Inc.
Address: 210 Evans Way,
Somerville, New Jersey 08876
(908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)
Business Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
Emergency Phone: International: +1-813-248-0585 (collect-24 hrs)

SUPPLIER/IMPORTER'S NAME (Asia):

Address:

Business Phone:

EMAIL of Competent Person for Information on SDS: techserv@stifiestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) RE Cat. 2

Signal Word: Warning

Hazard Statement Codes: H351, H319, H373

Precautionary Statement Codes: P201, P202, P260, P271, P264, P280, P308 + P313, P305 + P351 + P338, P337 + P313, P304 + P340, P312, P321, P403 + P233 + P405, P501

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

EMERGENCY OVERVIEW: Product Description: This product consists of a coated or uncoated molded block or shape, or quilted panel mineral wool mixture with an aluminum foil reinforced polypropylene encapsulation and no odor. **Health Hazards:** This product does not normally present an exposure hazard; however, exposure to particles of the mineral wool may result in mechanical eye irritation and respiratory irritation. Long-term inhalation of glass wool fibers can cause damage to the lungs. Mineral Wool is a suspect carcinogen by inhalation (as synthetic vitreous glass wool fibers). Although the proprietary resin component is a suspect skin sensitizer, this effect is not expected from this product. **Flammability Hazards:** This product is non-flammable and non-combustible. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., aluminum, carbon, silicon, nitrogen or titanium oxides, formaldehyde, phenol and ammonia). **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** This product has not been tested for potential hazards if released to the environment. All release should be avoided. **Emergency Considerations:** Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Amorphous Silica	112945-52-5	Listed	Not Listed	KE-30953	Listed	< 90.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISA: Classification: Acute Oral Toxicity Cat. 5 Hazard Statement Codes: H303 KOREAN ISHA/GHS: Classification: Not Applicable
Hydrated Alumina	21645-51-2	Listed	1-17	KE-00980	Listed	0.0-60.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Eye Irritation Cat. 2A Hazard Codes: H319

See Section 16 for full text of Classification

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Aluminum Oxide	1344-28-1	Listed	1-23	KE-01012	Listed	0.0-40.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Applicable
Polycrystalline Wools (Aluminum chloride, basic, reaction products with silica)	675106-31-7	Not Listed	Not Listed	Not Listed	Listed	0.0-30.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Applicable
Silicon	7440-21-3	Listed	Not Listed	KE-31029	Listed	0.0-20.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Flammable Solid Cat. 1, Acute Oral Toxicity Cat. 5 Hazard Statement Codes: H228, H303 KOREAN ISHA/GHS: Classification: Flammable Solid Category 1 Hazard Statement Codes: H228
Titanium Dioxide (Rutile)	1317-80-2	Listed	1-558	KE-30681	Listed	0.0-20.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Applicable
Mineral Wool Consists of:	65997-17-3	Listed	Not Listed	KE-17630	Listed	0.0-20.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3 Hazard Codes: H351, H319, H335
Vitroeous Silicate Continuous Filament Glass Fiber						80% 20%	
AES Fibers (Synthetic fibers, alkaline earth silicate)	436083-99-7	Not Listed	Not Listed	Not Listed	Listed	0.0-10.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Applicable
Amorphous Fused Silica Filament	60676-86-0	Listed	Not Listed	KE-30959	Listed	0.0-10.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Applicable
Proprietary Polyester Fiber		Unknown	Unknown	Unknown	Unknown	0.0-10.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Determined
Proprietary Cured Phenol Formaldehyde Resin		Unknown	Unknown	Unknown	Unknown	0.0-10.0%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Determined
Aluminum Foil		Mixture	Mixture	Mixture	Mixture	Not Applicable	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Not Applicable

See Section 16 for full text of Classification

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If particulates are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

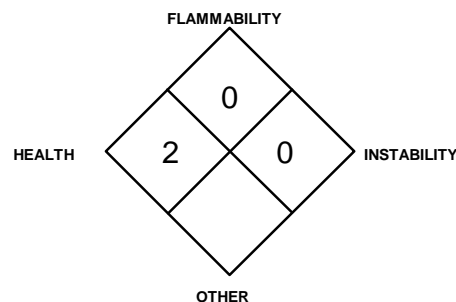
5. FIRE-FIGHTING MEASURES (Continued)

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., aluminum, carbon, silicon, nitrogen or titanium oxides, formaldehyde, phenol and ammonia).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Small releases of this product can be carefully picked-up, swept up or cleaned up avoiding generating of particulates.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum, avoiding generation of dusts and particulates.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing particulates generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
AES Fibers	436083-99-7	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Workplace Exposure Limits/Control Parameters (continued):

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	mg/m ³
Aluminum Trihydrate	21645-51-2	NE	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 4 mg/m ³ (inhalable fraction); 1.5 mg/m ³ (respirable fraction) DFG MAK Pregnancy Risk Classification: D
Amorphous Silica	112945-52-5	NE	NE	NE	NE	NE	NE	NE	Carcinogen: IARC-3
Amorphous Silica Fused	60676-86-0	NE	NE	30 mg/m ³ % SO ₂ + 2 (total dust) 250 mppcf % SO ₂ +5 or (resp. dust)	10 mg/m ³ % SO ₂ + 2 (resp. dust)	6	NE	NE	DFG MAK: TWA = 0.3 (respirable fraction) DFG MAK Pregnancy Risk Classification: C Carcinogen: IARC-3
Mineral Wool Fiber	65997-17-3	10	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	5 (total mineral wool dust, or 3 f/cc TWA (fibers ≤ 3.5 um diameter; ≥ 10 um length)	NE	5000 (Ca)	NE
Synthetic Vitreous Fibers		1 f/cc ^(F)	NE	NE	NE	NE	NE	NE	Carcinogen: IARC-3, MAK-3B, TLV-A3
Poly-crystalline Wools	675106-31-7	NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Polyester Fiber		NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Cured Phenol Formaldehyde Resin		NE	NE	NE	NE	NE	NE	NE	NE
Silicon	7440-21-3	NE	NE	15 (total dust) 5 (resp. fract.) Vacated 1989 PEL: 10 (dust)	NE	10 (total dust), 5 (resp. fract.)	NE	NE	NE
Titanium Dioxide (Rutile)	1317-80-2	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM OXIDE:

Austria: TMW = 5 mg/m³; KZW = 10 mg/m³, resp, 2007
Belgium: TWA = 10 mg(Al)/m³, MAR 2002
Denmark: TWA = 2 mg(Al)/m³, MAY 2011
France: VME = 10 mg/m³, FEB 2006
Hungary: TWA = 6 mg/m³ (resp), SEP 2000
Iceland: TWA = 10 mg(Al)/m³, NOV 2011
Japan: OEL = 0.5 mg/m³ (resp. dust), 2 mg/m³ (total dust), MAY 2012
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg(Al₂O₃)/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Norway: TWA = 2 mg(Al)/m³, JAN 1999
Poland: MAC(TWA) = 2 mg/m³, MAC(STEL) = 16 mg/m³, JAN 1999
Russia: TWA = 6 mg/m³, JUN 2003
Sweden: TWA = 5 mg/m³ (total dust); TWA = 2 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 3 mg/m³, KZG-W = 24 mg/m³, resp, fume, JAN 2011
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT,2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

AMORPHOUS SILICA:

Australia: TWA = 2 mg/m³ (respirable dust), JUL 2008
United Kingdom: TWA = 6 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 2.4 mg/m³ (resp. dust), OCT 2007

ALUMINUM (HYDRATED):

Australia: TWA = 2 mg(Al)/m³, JUL 2008
Belgium: TWA = 2 mg(Al)/m³, MAR 2002
Finland: TWA = 2 mg(Al)/m³, NOV 2011
France: VME = 2 mg(Al)/m³, FEB 2006
Korea: TWA = 2 mg(Al)/m³, 2006
New Zealand: TWA = 2 mg(Al)/m³, JAN 2002

ALUMINUM (HYDRATED) [continued]:

Russia: TWA = 6 mg/m³, JUN 2003
Sweden: TWA = 1 mg(Al)/m³, JUN 2005
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

MINERAL WOOL FIBERS:

Mexico: TWA 10 mg/m³ (dust), 2004

SILICON:

Belgium: TWA = 10 mg/m³, MAR 2002
Denmark: TWA = 10 mg/m³, MAY 2011
France: VME = 10 mg/m³, FEB 2006
Iceland: TWA = 0.5 ppm (0.7 mg/m³), NOV 2011
Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg/m³; STEL = 20 mg/m³ (inhalable), 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Norway: TWA = 10 mg/m³, JAN 1999
Peru: TWA = 10 mg/m³ (inhal), 4 mg/m³ (resp), JUL 2005
Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT2007
United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

TITANIUM DIOXIDE:

ARAB Republic of Egypt: TWA = 15 mg/m³, JAN 1993
Austria: MAK-TMW = 5 mg/m³, KZW = 10 mg/m³, resp, 2007
Belgium: TWA = 10 mg/m³, MAR 2002
Denmark: TWA = 6 mg(Ti)/m³, MAY 2011
France: VME = 10 mg/m³, FEB 2006
Germany: MAK = 1.5 mg/m³ (respirable), 2005
Iceland: TWA = 6 mg(Ti)/m³, NOV 2011
Japan: OEL = 1 mg/m³ (resp. dust), 4 mg/m³ (total dust), MAY 2009

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

International Occupational Exposure Limits (continued):

TITANIUM DIOXIDE (continued):

Korea: TWA = 10 mg/m³, 2006
Mexico: TWA = 10 mg(Ti)/m³; STEL = 20 mg(Ti)/m³, 2004
The Netherlands: MAC-TGG = 10 mg/m³, 2003
New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002
Norway: TWA = 5 mg/m³, JAN 1999
Peru: TWA = 10 mg/m³, JUL 2005
Poland: MAC(TWA) = 10 mg(Ti)/m³, MAC(STEL) = 30 mg(Ti)/m³, JAN 1999

TITANIUM DIOXIDE (continued):

Russia: TWA = 10 mg/m³, JUN 2003
Sweden: TWA = 5 mg/m³ (total dust), JUN 2005
Switzerland: MAK-W = 3 mg/m³, DEC 2006
Turkey: TWA = 15 mg/m³, JAN 1993
United Kingdom: TWA = 10 mg/m³ (inhal. dust), OCT 2007
United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998). The following are NIOSH Respiratory Protective Equipment Guidelines for the Mineral Wool Fiber component to aid in selection of respiratory equipment in event of release of fibers or Amorphous Silica dust.

AMORPHOUS SILICA

CONCENTRATION

RESPIRATORY PROTECTION

Up to 30 mg/m³: Any quarter-mask respirator.
Up to 60 mg/m³: Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100 or any Supplied-Air Respirator (SAR).
Up to 150 mg/m³: Any SAR operated in a continuous-flow mode. Any Powered Air-Purifying Respirator (PAPR) with a high-efficiency particulate filter.
Up to 300 mg/m³: Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter. Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode. Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter, or any self-contained breathing apparatus with a full facepiece, or any supplied-air respirator with a full facepiece.
Up to 3000 mg/m³: Any SAR operated in a pressure-demand or other positive-pressure mode.
Emergency or planned entry into unknown concentrations or IDLH conditions: Any Self-Contained Breathing Apparatus (SCBA) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA.
Escape: Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter or any appropriate escape-type, SCBA.

MINERAL WOOL FIBERS

CONCENTRATION

RESPIRATORY PROTECTION

5X REL: Qm 10X REL: 95XQ Any supplied-air respirator (SAR).
25X REL: Sa:Cf Any Powered Air-Purifying Respirator (PAPR) with a high-efficiency particulate filter.
50X REL: 100F PAPR with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or planned entry into unknown concentrations or IDLH conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape: Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter.

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: As described in Section 2.

MOLECULAR FORMULA: Mixture.

ODOR: None.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

MELTING POINT: Not determined.

VAPOR PRESSURE: Not applicable.

COLOR: As described in Section 2.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: Zero.

FLASH POINT: Not applicable.

BOILING POINT: Not applicable.

SPECIFIC GRAVITY (water = 1): Not available.

9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

VAPOR DENSITY (air = 1): Not applicable.

EVAPORATION RATE (*n*-BuAc = 1): Not applicable.

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be a characteristic to distinguish a release of this product.

CARB VOC: Not applicable.

SCAQMD (U.S. EPA Method 24): Not applicable.

SOLUBILITY IN SOLVENTS: Not available.

pH: Not applicable.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, carbon, silicon, nitrogen or titanium oxides, formaldehyde, phenol and ammonia). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong acids.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Although unlikely due to the form of the product, inhalation of particles can cause irritation to the respiratory system. Chronic inhalation of Mineral Wool fibers can cause damage to the lungs. The Mineral Wool component is a suspect carcinogen by inhalation. Due to the encapsulate form of this product, this hazard is lessened; however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact with particulates may cause irritation, redness, and tearing from mechanical irritation. Skin contact with the Mineral Wool may cause mechanical irritation of the skin.

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and blockage of the digestive system may occur.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection.

Additional Health Information: Polycrystalline fibers have not been shown to migrate from the lung and/or gut and do not become located in other organs of the body.

AES fibers contained in this product have been designed to be rapidly cleared from lung tissue. This low bio-persistence has been confirmed in many studies on AES using EU protocol ECB/TM/27(rev 7). When inhaled, even at very high doses, AES fibers do not accumulate to any level capable of producing a serious adverse biological effect.

Lifetime rat inhalation studies in the rat on Polycrystalline Wool fibers at the maximum levels achievable have shown no evidence of lung cancer, lung fibrosis or any other adverse effect, apart from a minimal pulmonary response typical of that of a 'low toxicity dust'. Also, a lifetime feeding study in rats has produced no evidence of any adverse effects at levels up to 2.5 % in the diet. In intraperitoneal, intratracheal and intrapleural studies in rats, together with two *in vitro* tests, all showed negative results whereas asbestos and crystalline silica which were used as positive controls (where relevant) produced positive responses. The results of these extensive testing programs indicate that Polycrystalline Wool materials lack one or more of the fundamental characteristics necessary for mesothelioma induction, as well as not possessing fibrogenic potential.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Exposure to this product may cause the following health effects:

Acute: Inhalation of particulates may cause irritation of respiratory system. Eye contact may cause mechanical irritation.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin). The Mineral Wool component is a suspect human carcinogen by inhalation.

TARGET ORGANS: Acute: Eyes, respiratory system. Chronic: Respiratory system.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

ALUMINUM (HYDRATE):

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia

TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase

TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus

ALUMINUM (HYDRATE) [continued]:

TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus

TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical

TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

ALUMINUM (HYDRATE) [continued]:

TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes
TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus
TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified
TDLo (Intraperitoneal-Rat) 150 mg/kg
TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

ALUMINUM OXIDE:

LD₅₀ (Intraperitoneal-Mouse) > 3600 mg/kg
TCLo (Inhalation-Rat) 200 mg/m³/5 hours/28 weeks-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi, chronic pulmonary edema; Related to Chronic Data: death
TCLo (Inhalation-Rabbit) 200 mg/m³/5 hours/28 weeks-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi; Lungs, Thorax, or Respiration: chronic pulmonary edema; Related to Chronic Data: death
TDLo (Intraperitoneal-Rat) 90 mg/kg: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: tumors
TDLo (Implant-Rat) 200 mg/kg: Tumorigenic: neoplastic by RTECS criteria; Tumorigenic: tumors at site of application
TD (Implant-Rat) 200 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria, tumors at site of application

AMORPHOUS SILICA:

LD₅₀ (Oral-Rat) 3160 mg/kg
LD₅₀ (Intravenous-Rat) 15 mg/kg: Lungs, Thorax, or Respiration: acute pulmonary edema
TCLo (Inhalation-Rat) 154 mg/m³/6 hours/4 weeks-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases, Metabolism (Intermediary): other proteins
TCLo (Inhalation-Rat) 5.41 mg/m³/5 days-intermittent: Lungs, Thorax, or Respiration: other changes, changes in lung weight; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TCLo (Inhalation-Rat) 1.39 mg/m³/5 days-intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain
TDLo (Intratracheal-Mouse) 96.77 mg/kg: Lungs, Thorax, or Respiration: acute pulmonary edema, other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TDLo (Intratracheal-Mouse) 50 mg/kg: Lungs, Thorax, or Respiration: changes in lung weight
TDLo (Intratracheal-Mouse) 2 mg/kg: 2 mg/kg: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis), other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
TDLo (Intratracheal-Mouse) 2 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: peptidases
TDLo (Intratracheal-Mouse) 2 mg/kg: Lungs, Thorax, or Respiration: fibrosis alveolitis; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: peptidases, Metabolism (Intermediary): effect on inflammation or mediation of inflammation
LDLo (Intratracheal-Rat) 50 mg/kg
LDLo (Intratracheal-Rat) 10 mg/kg
LDLo (Intratracheal-Mouse) 96.77 mg/kg: Lungs, Thorax, or Respiration: acute pulmonary edema, dyspnea, other changes

AMORPHOUS SILICA, FUSED:

TCLo (Inhalation-Rat) 197 mg/m³/6 hours/26 weeks-intermittent: Lungs, Thorax, or Respiration: changes in lung weight
TDLo (Intratracheal-Rat) 105.26 mg/kg: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis)
TDLo (Intratracheal-Rat) 105.26 mg/kg: Lungs, Thorax, or Respiration: fibrosis, focal (pneumoconiosis), other changes, changes in lung weight

IRRITANCY OF PRODUCT: When tested using approved methods (Directive 67/548/EEC, Annex 5, Method B4), fibers contained in this material give negative results for chemical irritancy. Particles from this product may cause irritation by inhalation or eye contact due to mechanical irritation.

SENSITIZATION OF PRODUCT: No sensitization effects known.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

AMORPHOUS SILICA & AMPHOROUS SILICA, FUSED: IARC-3 (Unclassifiable as to Carcinogenicity in Humans)

MINERAL WOOL FIBER (as synthetic vitreous fibers): ACGIH TLV-A3 (Confirmed Animal Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization); MAK-3B (Substances for Which In Vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification in one of the other categories. Further studies are required before a final classification can be made.)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

MINERAL WOOL FIBER (continued):

TDLo (Implant-Rat) 400 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Gastrointestinal: tumors; Tumorigenic: tumors at site of application
TDLo (Implant-Rabbit) 20 mg/kg: Lungs, Thorax, or Respiration: fibrosis alveolitis; Immunological Including Allergic: increase in cellular immune response; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation
LDLo (Intraperitoneal-Rat) 400 mg/kg: Lungs, Thorax, or Respiration: fibrosis (interstitial); Gastrointestinal: hypermotility, diarrhea; Nutritional and Gross Metabolic: weight loss or decreased weight gain
LDLo (Intraperitoneal-Mouse) 40 mg/kg: Behavioral: somnolence (general depressed activity), tremor; Gastrointestinal: other changes
LDLo (Intratracheal-Rat) 120 mg/kg: Lungs, Thorax, or Respiration: changes in pulmonary vascular resistance, acute pulmonary edema
LDLo (Intravenous-Rabbit) 35 mg/kg: Behavioral: somnolence (general depressed activity); Cardiac: other changes; Lungs, Thorax, or Respiration: other changes
LDLo (Intravenous-Cat) 5 mg/kg: Behavioral: convulsions or effect on seizure threshold, muscle weakness, Lungs, Thorax, or Respiration: respiratory stimulation

MINERAL WOOL FIBER:

LD (Intratracheal-Mouse) > 20 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases
TCLo (Inhalation-Rat) 16 mg/m³/6 hours/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes
TCLo (Inhalation-Rat) 5 mg/m³/7 hours/90 weeks-intermittent: Tumorigenic: carcinogenic by RTECS criteria; Blood: leukemia
TCLo (Inhalation-Hamster) 30 mg/m³/6 hours/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases
TCLo (Inhalation-Hamster) 30 mg/m³/6 hours/78 weeks-intermittent: Lungs, Thorax, or Respiration: other changes
TDLo (Intraperitoneal-Rat) 50 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Gastrointestinal: tumors
TDLo (Intraperitoneal-Hamster) 400 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Gastrointestinal: tumors
TDLo (Intraperitoneal-Rabbit) 25 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Gastrointestinal: tumors
TDLo (Intratracheal-Hamster) 125 mg/kg/5 weeks-intermittent: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: tumors
TDLo (Intraperitoneal-Rat) 100 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: tumors
TDLo (Implant-Rat) 200 mg/kg: Tumorigenic: neoplastic by RTECS criteria, tumors at site of application
TDLo (Implant-Rat) 200 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria, tumors at site of application
TDLo (Implant-Mouse) 1600 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: tumors; Kidney/Ureter/Bladder: tumors
Mutation Test Systems-Not Otherwise Specified (Human-Fibroblast) 10 mg/L
Mutation Test Systems-Not Otherwise Specified (Hamster Ovary) 10 mg/L
Micronucleus Test (Hamster Ovary) 2 µg/cm²

SILICON:

Standard Draize Test (Eye-Rabbit) 3 mg; Mild
LD₅₀ (Oral-Rat) 3160 mg/kg
LDLo (Intraperitoneal-Rat) 500 mg/kg: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified, effect, not otherwise specified; Lungs, Thorax, or Respiration: respiratory stimulation

TITANIUM DIOXIDE (RUTILE):

TCLo (Inhalation-Mouse) 300,000 µg/kg/30 days-intermittent: Brain and Coverings: other degenerative changes; Biochemical: Metabolism (Intermediary): lipids including transport, effect on inflammation or mediation of inflammation
TCLo (Inhalation-Mouse) 300,000 µg/kg/30 days-intermittent: Brain and Coverings: other degenerative changes; Biochemical: Metabolism (Intermediary): lipids including transport, other proteins
DNA Damage (Human Lung) 3.8 mg/L/24 hours

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided. No aquatic toxicity data are available for components.

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD: REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: No; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory, except the AES Fibers and Polycrystalline Wools components.

15. REGULATORY INFORMATION (Continued)

UNITED STATES REGULATIONS (continued):

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Mineral Wool component (Listed as Glass Wool Fiber) is on the California Proposition 65 lists. **WARNING!** This product contains a compound known to the State of California to cause cancer.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), as indicated in Section 2.

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory as indicated in Section 2.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory as indicated in Section 2.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List as indicated in Section 2.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): **CAUTION!** IF RELEASED TO THE AIR, PARTICULATES FROM MINERAL WOOL MAY CAUSE IRRITATION BY INHALATION AND EYE CONTACT. CONTAINS SUSPECT CARCINOGEN BY INHALATION. Avoid breathing particulates. Install only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection while handling. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂. **IN CASE OF SPILL:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Lungs) Repeated Exposure Category 3

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H319: Causes serious eye irritation. H373: H373: May cause damage to lungs through prolonged or repeated exposure by inhalation.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P260: Do NOT breathe dust or particulates. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, clothing, eye protection and face protection. P284: Wear respiratory protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

16. OTHER INFORMATION (Continued)

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-

68. Under ISHA, no differences in classification are applicable.

COMPONENT CLASSIFICATION:

Labeling and Classification Full Text under GHS:

Aluminum (Hydrated): This is a self-classification.

Classification: Eye Irritation Category 2A

Hazard Statements: H319: Causes serious eye irritation.

Amorphous Silica: This is a self-classification.

Classification: Acute Oral Toxicity Category 5

Hazard Statements: H303: May be harmful if swallowed.

Mineral Wool: This is a self-classification.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Hazard Statements: H351: Suspected of causing cancer. H319: Causes serious eye irritation. Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Silicon: This is a self-classification.

Classification: Flammable Solid Category 1, Acute Oral Toxicity Category 5

Hazard Statements: H228: Flammable solid. H303: May be harmful if swallowed.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible). 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. **3 Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres;

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

HEALTH HAZARD (continued): 2 (continued): Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react. **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%) / cellulose mixture and the criteria for Packing Group I and II are not met. **Unstable Reactives:** Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. **Organic Peroxides:** Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%) / cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%) / cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators.

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 2 (continued): Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard **4**. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TDLo:** Lowest dose to cause a symptom. **TCLo:** Lowest concentration to cause a symptom. **TD₀, LDLo, and LD₀, or TC, TCo, LCLo, and LC₀:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** **IARC:** International Agency for Research on Cancer. **NTP:** National Toxicology Program. **RTECS:** Registry of Toxic Effects of Chemical Substances. **IARC** and **NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI:** ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TL_m:** Median threshold limit. **log K_{ow}** or **log K_{oc}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **IC:** Transport Canada. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **IC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

METI: Ministry of Economy, Trade and Industry.

SAFETY DATA SHEET GALVANIZED STEEL PRODUCTS

Section 1 - Identification

1(a) Product Identifier Used on Label: EMT, IMC, RIGID, FENCE, MECHANICAL, FLO-FORM ANGLE or CHANNEL

1(b) Other Means of Identification: Galvanized Carbon Steel- Pipe, Tube & Shaped profile

1(c) Recommended Use of the Chemical and Restrictions on Use: None

1(d) Name, Address and Telephone Number of the Manufacturer:



Allied Tube & Conduit Corp
16100 South Lathrop Avenue
Harvey, IL 60426
(708) 339-1610

1(e) Emergency Phone Number: (800) 424-9300 (24 Hours) CHEMTREC

Section 2 - Hazard(s) Identification

*Note: Steel products as sold by Allied Tube & Conduit are not hazardous. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc, which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, may present health hazards.

2(a) Hazard Symbol, Hazard Classification, Signal Word and Hazard Statement:

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement
	<ul style="list-style-type: none"> ■ Carcinogenicity – 2 ■ Reproductive Toxicology – 2 ■ Target Organ Systemic Toxicity - Repeated Exposure - 1 	DANGER	H315 – Causes skin irritation. H317 – May cause an allergic skin reaction H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 – May cause respiratory irritation. H351 – Suspected of causing cancer H401 – Toxic to aquatic life
	<ul style="list-style-type: none"> ■ Acute Toxicity – Oral 4 ■ Respiratory or Skin Sensitization – 2 ■ Target Organ Systemic Toxicity - Single Exposure - 3 		

2(b) Precautionary Statements:

P261 – Avoid breathing dust/fume; P264 – Wash thoroughly after handling; P270 – Do not eat, drink or smoke while using this product; P271 – Use only outdoors in well ventilated areas; P272 – Contaminated Work Clothing must not be allowed out of the workplace; P273 – Avoid release to the Environment; P280 – Wear protective gloves/protective clothing/eye protection/face protection; P302 – If on skin: Wash with plenty of water and seek medical attention if irritation or rash occurs; P304/340 – If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing; P308 – If exposed or concerned: Seek medical advice; P309 – If exposed and feel unwell: Seek medical attention; P363 – Wash contaminated clothing before reuse.

2(c) Hazards Not Otherwise Classified: None Known

2(d) Unknown Acute Toxicity Statement (mixture): None Known

Section 3 - Composition/Information on Ingredients

Chemical Name, Common Name (synonyms), CAS Number and Other Identifiers and Concentration:

Chemical Name	CAS Number	EC Number	% Weight
Iron	7439-89-6	231-096-4	95.7 - 98.3
Carbon	7440-44-0	231-153-3	≤ 0.25
Manganese	7439-96-5	231-105-1	≤ 0.95
Phosphorus	7723-14-0	231-768-7	≤0.035
Sulfur	7704-34-9	231-722-6	≤0.035
METALLIC COATING:			
Zinc	7440-66-6	231-175-3	0.50-3.00
Aluminum	7429-90-5	231-072-3	<0.10
Chromium	7440-47-3	231-157-5	<0.0005
Polymeric OD coating			<0.50
TALC - ID Coating	14807-96-6	238-877-9	≤0.10
Quartz - ID Coating	14806-60-7	238-878-4	0.1-1.0%
ID antimicrobial coating			<0.50

Section 4 - First-Aid Measures

4(a) Necessary First-Aid Instructions by Relevant Routes of Exposure.

*Note: Steel products under normal conditions do not present an inhalation, ingestion, or contact health hazard.

However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc, which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, may present health hazards.

Inhalation: In case of overexposure to airborne fumes and particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly. Treat metal fume fever by bed rest and administer a pain and fever reducing medication.

Skin Contact: In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

Eye Contact: In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

Ingestion: Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

4(b) Most Important Symptoms or Effects, and Any Symptoms that are Acute or Delayed:

Inhalation: Metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain and chills. No long term effects of metal fume fever have been noted.

Skin Contact: Not likely to present an acute or chronic health effect.

Eye Contact: Not likely to present an acute or chronic health effect.

Ingestion: Not likely to present an acute or chronic health effect.

Section 5 - Fire-Fighting Measures

Flashpoint/Flammable Limits: Not Applicable. NFPA Ratings: Health – 1; Fire – 0; Instability - 0

5(a) Suitable Extinguishing Equipment: Steel Products in the solid state present no fire or explosion hazard. Prevent the accumulation of dust. Consider use of Class D extinguisher if large quantities of steel/zinc dust is generated.

5(b) Specific Hazards that Develop from the Chemical: None as sold. Prevent the accumulation of dust. When burned, toxic smoke or fume may be emitted.

5(c) Special Protective Equipment or Precautions for Firefighters: Self-contained NIOSH approved respiratory protection and full protective clothing when smoke from fire is present. Prevent release of runoff to sewers, storm drains, and /or water ways.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures:

RESPIRATORY: For welding or burning – NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

SKIN: Protective gloves should be worn as required for welding, burning, or handling operations. **EYE:** Use safety glasses or goggles as required for welding, burning or handling operations.

VENTILATION: Local exhaust ventilation should be provided when sawing, grinding or machining to prevent excessive dust or fume exposure. During welding, burning or brazing please follow the ANSI Standard Z49.1 “Safety in Welding and Cutting”.

OTHER PROTECTIVE EQUIPMENT: Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

6(b) Methods and Materials Used for Containment: Not applicable for this product as sold/shipped. If material is in a dry state, avoid inhalation of dust. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

6(c) Disposal Methods: Waste Disposal Methods: - Dispose used or unused product in accordance with applicable Federal, State, and Local regulations. Please recycle. Do not release into sewers or waterways.

Section 7 - Handling and Storage

7(a) Precautions for safe handling: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts

7(b) Conditions for Safe Storage, Including Any Incompatibilities: Stable under normal conditions of use, storage, and transport. Will react with strong acid to liberate hydrogen.

Section 8 - Exposure Controls/Personal Protection

Note: Steel Products under normal conditions do not present an inhalation, ingestion, or contact health hazard. These products contain trace quantities of various elements but not at reportable levels under the OSHA Hazard Communication Standard Limit (29 CFR 1910.1200).

8(a) Control Parameters:

Ingredients	% Weight	EXPOSURE LIMITS (a) During operations (such as welding, burning, or cutting) where dust or fumes are generated.	
		OSHA PEL	ACGIH TLV (2015)
Base metal: Iron	95.7 - 98.3	10 mg/M3 for iron oxide fume	5 mg/M3 for iron oxide fumes
Alloying Elements: Carbon	≤ 0.25	None established	None established
Manganese	≤ 0.95	(c) 5 mg/M3 – compounds	0.02 mg/M3 (resp.)
METALLIC COATING:			
*Zinc, Zinc Dust or Fume	0.50-3.00	15 mg/M3 - zinc oxide dust 5 mg/M3 - zinc oxide fume or respirable dust	5 mg/M3 - zinc oxide fume (b) 10 mg/M3 – zinc oxide fume
*Aluminum, Aluminum Dust or fume	<0.10	15 mg/M3 – metal dust 5 mg/M3 – respirable fraction	1 mg/M3 (resp.)
Chromium	<0.0005	0.5 mg/M3 as Cr II or III 0.005 mg/M3 as Cr IV	0.5 mg/M3 as Cr II or III 0.05 mg/M3 as water soluble
Polymeric OD coating	<0.50	n/a	n/a
ID antimicrobial coating	<0.50	n/a	n/a

(a) OSHA Annotated Table Z-1 <https://www.osha.gov/dsg/annotated-pels/tablez-1.html>

(b) Denotes short term exposure limit (STEL).

(c) Denotes “ceiling limit” which is not to be exceeded at any time.

* Subject to Section EPCRA 313 reporting.

8(b) Appropriate Engineering Controls: Local exhaust ventilation should be provided when sawing, grinding or machining to prevent excessive dust or fume exposure. During welding, burning or brazing please follow the ANSI Standard Z49.1 “Safety in Welding and Cutting”.

8(c) Individual Protection Measures:

RESPIRATORY: For welding or burning – NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure

SKIN: Protective gloves should be worn as required for welding, burning, or handling operations. Cut resistant gloves should be used when handling steel products.

EYE: Use safety glasses or goggles as required for welding, burning or handling operations.

OTHER PROTECTIVE EQUIPMENT: Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

Section 9 - Physical and Chemical Properties

- 9(a) Appearance:** Metallic gray
- 9(b) Upper/lower flammability or Explosive limits:** N/A
- 9(c) Odor:** Odorless
- 9(d) Vapor Pressure:** N/A
- 9(e) Odor Threshold:** N/A
- 9(f) Vapor Density:** N/A
- 9(g) pH:** N/A
- 9(h) Relative Density:** 7.86
- 9(i) Melting Point/freezing point:** Melting Point of Base Material - 2750F Metallic Coating - 780F
- 9(j) Solubility(ies):** N/A
- 9(k) Initial boiling point and boiling range:** N/A
- 9(l) Flash point:** N/A
- 9(m) Evaporation rate:** N/A
- 9(n) Flammability:** Steel Products in the Solid State present no fire or explosion hazard.
- 9(o) Partition coefficient; n-octanol/water:** N/A
- 9(p) Auto-ignition temperature:** N/A
- 9(q) Decomposition Temperature: 9(r) Viscosity:** N/A

N/A - Not Applicable

ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

- 10(a) Reactivity:** Stable under normal conditions of use, storage and transport. Will react with strong acid to liberate hydrogen. At temperature above the melting point of the coating, galvanized pipe may liberate zinc fumes, carbon monoxide and oxides of nitrogen.
- 10(b) Chemical Stability:** Stable under normal conditions of use, storage and transport.
- 10(c) Possibility of Hazardous Reaction:** None known.
- 10(d) Conditions to Avoid:** Storage with strong acids; Prevent accumulation of dusts from welding or cutting
- 10(e) Incompatible Materials:** Strong acids
- 10(f) Hazardous Decomposition Products:** At temperatures above the melting point of the coating, galvanized pipe may liberate zinc fumes, carbon monoxide, and oxides of nitrogen.

Section 11 - Toxicological Information

There are no Lethal Concentration/Dose information for galvanized steel products. Steel products under normal conditions do not present an inhalation, ingestion, or contact health hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc., which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, may present health hazards.

Information provided below addresses potential exposure to dust or fume resulting from the operations identified above. Inhalation of zinc oxide (welding fume) may result in metal fume fever, which includes chills, muscle ache, nausea, fever, dry throat, cough; lassitude (weakness, exhaustion); metallic taste; headache; blurred vision; low back pain; vomiting; malaise (vague feeling of discomfort); chest tightness; dyspnea (breathing difficulty), decreased pulmonary function. Chronic inhalation of high concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. No long term effects of metal fume fever have been noted. IDLH=500 mg/M3.

Carcinogenicity: Welding fumes – IARC Group 2B, a mixture that is possibly carcinogenic to humans.

See Section 2 for Hazard Symbols, Hazard Classifications, Signal Words, Hazard Statements, and Precautionary Statements.

Section 12 - Ecological Information

12(a) Ecotoxicity (Aquatic & Terrestrial): No data available for galvanized steel products. Prevent the release of accumulated dusts or fume from entering storm drains and/or waterways.

12(b) Persistence and Degradability: No data available

12(c) Bioaccumulative Potential: No data available

12(d) Mobility in Soil: No data available for galvanized steel products. Prevent the release of accumulated dusts or fume to soil that may migrate to groundwater:

12(e) Other Adverse Effects: No data available

Section 13 - Disposal Considerations

13(a) Disposal: Scrap metal and processing dusts should be collected for recovery and reuse. Dusts not collected for recovery should be classified and disposed of in accordance with applicable federal, state, and local regulations.

13(b) Container Cleaning and Disposal: Not applicable.

Section 14 - Transport Information

14(a) UN Number: Not regulated

14(b) UN Proper Shipping Name: Not regulated

14(c) Transport Hazard Classes: Not regulated

14(d) Packing Group: Not regulated

14(e) Marine Pollutant: Not regulated

14(f) Special Precautions: Not regulated

Section 15 - Regulatory Information

OSHA Hazard Communication Standard (HCS): This product is not hazardous and meets the definition of “article” under US OSHA HCS 29CFR1910.1200. However, dusts or fumes generated from operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc., which result in the generation of airborne particulates and/or fumes, may be regulated.

OSHA 29CFR1910.252(c)(6): Provide mechanical ventilation if welding/brazing product surface indoors. Provide air replacement or respiratory protection if welding/brazing in confined spaces.

SARA 311/312 Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Section 313 Supplier Notification: Galvanized steel products contain the following toxic chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372: Zinc Compounds [CAS # 7440-66-6] 0.5 to 3% by weight.

California Proposition 65: This product contains chromium known to the State of California to cause cancer.

Toxic Substances Control Act: All product components are listed on the TSCA Inventory.

EU RoHS: Allied Tube & Conduit’s metallic coating is considered lead-free. The aggregate lead content will be less than or equal to 0.1% by weight (an amount consistent with the RoHS directive).

EU REACH: The chromate passivation, < 0.1% by weight.

Section 16 - Other Information

This SDS was prepared by Atkore International, Inc. and covers its Allied Tube & Conduit galvanized steel products: EMT, IMC, RIGID, FENCE, MECHANICAL, FLO-FORM ANGLE or CHANNEL.

Hazardous Material Identification System (HMIS) Classification

Health Hazard = 1/Fire Hazard = 0/Physical Hazard = 0

National Fire Protection Association (NFPA):

Health = 1/Fire = 0/Instability = 0

Revision History:

May 29, 2015 – Update to UN GHS Format

July 19, 2010 – Update of content

November 11, 2002 – Original Issue

SAFETY DATA SHEET



Revision Date: 05/15/2015
Revision Number: 001.1

1. PRODUCT AND COMPANY INFORMATION

Product Name:	Graphite Petrolatum Anti-Seize Meets SAE-AMS-2518	Item number(s):	07-00, 07-01, 07-02, 07-03, 07-35
Product Type/Use:	Lubricant	NSN(s):	8030-01-044-5035
Restriction of Use:	None Identified	Region(s):	United States
Company Address:	Armite Laboratories Inc. 1560 Superior Ave Ste. A-4 Costa Mesa, CA 92627	Telephone:	949 646-9035
		Product Emergency:	CHEM-TEL 800-225-3924

2. HAZARD IDENTIFICATION

Signal Word	Hazard Class	Hazard Category	Pictogram(s)
Warning	Eye Irritant	2B	None Required

Hazard Statements: Causes Eye Irritation

May cause irritation to the skin, eyes, and respiratory tract. If ingested, may cause gastrointestinal disturbances.

Precautionary Statements

Prevention: Wash hands thoroughly after handling. Wear protective eye and face protection. Wear protective gloves if sensitive.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to remove, and continue to rinse. Do not rub eyes. IF INGESTED: May cause gastrointestinal disturbances.

Storage: Store in a tightly closed container at ambient temperature.

Disposal: Follow all Federal, State and local regulations when disposing this material. Do not allow to enter waterways.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of chemicals (GHS).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component(s)	CAS Number	Percentage by weight*
Petroleum Jelly (Petrolatum)	8009-03-8	48-52
Graphite (synthetic)	7782-42-5	52-48

*Exact percentage may be a trade secret, concentration range is provided to assist user in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: No emergency care anticipated. When molten only (molten product can cause thermal burns) seek medical attention.

Skin contact: Wash with soap & water. When molten only (molten product can cause thermal burns). In serious cases, use emergency shower immediately. Flush skin thoroughly for 15 minutes while removing contaminated clothing. Obtain medical attention.

Eye contact: Flush with plenty of water. If irritation persists get medical attention. (Molten product can cause thermal burns) Flush eyes with water and continue washing for 15 minutes. Obtain medical attention.

Ingestion: Do not induce vomiting. When molten only (molten product can cause thermal burns) – Seek medical attention if necessary.

SAFETY DATA SHEET



Revision Date: 05/15/2015
Revision Number: 001.1

5. FIRE FIGHTING MEASURES

Extinguishing media: Treat as oil fire: Foam, dry chemical, carbon dioxide or water spray (fog). DO NOT use water jet.

Special firefighting procedures: Do not use water jet. Oil will float on water and can spread any fire.

Unusual fire or explosion hazard: Following products may be produced during fire: Oxides of carbon.

Special protective equipment for firefighters: Self-contained breathing apparatus for larger fires.

6. ACCIDENTAL RELEASE MEASURES

Environmental precautions: Avoid runoff to sewers and waterways. Product should not enter sewer or waterways. Dike to contain spill. Absorb on inert material such as sand, earth, vermiculite. After cooling, scrape/shovel material. Stop any leak when risk subsides. Use methods consistent with local regulations.

Clean-up method: Surfaces will be extremely slippery, use care to avoid falling. Scrape up as much material as possible. Clean residue with soap & water.

7. HANDLING AND STORAGE

Handling: Do not handle at temperatures > 40°C (104°F) unless wearing protective equipment. Prevent contact with eyes.

Ventilation: General (mechanical) room ventilation is expected to be satisfactory for use at room temperature.

Storage: Store in a cool place protected from light. Keep away from heat, sparks and flame.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Graphite (synthetic)	2 mg/m ³ (All forms of graphite except graphite fibers)	15 mg/m ³ (Total Dust) TWA 5mg/m ³ (Respirable Fraction) TWA	None	None

Engineering controls: Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits. Practice good industrial hygiene by washing with soap & water after each use.

Respiratory protection: Use NOISH approved respirator is there is a potential to exceed exposure limits. Observe OSHA regulations for respirator use. (29 CFR 1910.134).

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact in sensitive persons.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Paste	Flash point:	>93.4°C(200°F) Method: PMCC ASTM D93
Color:	Light grey	VOC content:	nil
Odor:	Mild petroleum	Boiling point:	> 260° (500°F)
Odor threshold:	Not available	Melting point:	>54°C (130°F)

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pH: Neutral
Solubility in water: Insoluble
Specific gravity: Not available
Partition coefficient: Not available
Flammable/Explosive limits
Lower limits: Not determined
Upper limits: Not determined

Vapor Pressure: <0.01 kPa(<0.08mm Hg) (at 20°C)
Density: 1.30 g/cm³
Kinematic Viscosity: Not available
Vapor Density: >5 (Air = 1)
Autoignition temp: No Data
Evaporation rate (butyl acetate =1): <0.01 compared to butyl acetate

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions

Conditions to avoid: Avoid ignition source. Keep away from heat.

Hazardous decomposition products: Carbon monoxide, carbon dioxide

Incompatible materials: Very strong oxidizers. Condition is aggravated when material is heated.

Hazardous reactions: Graphite reacts vigorously with liquid potassium, potassium peroxide and will ignite with chlorine trifluoride and fluorine. If graphite contacts liquid potassium, rubidium, or caesium at 300°C, intercalation compounds may be formed. These compounds may explode on contact with water or ignite in air.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, eyes

Potential Health Effects/Symptoms

Inhalation: No known significant effects or critical health hazards as high viscosity makes inhalation unlikely.

Skin contact: No known significant effects or critical hazards.

Eye contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards as grease results in gastric distress negating bio-accumulation concerns.

Hazardous Component(s)	LD50s and LC50s		Immediate and Delayed Effects
Graphite (Synthetic)	No information available		No information available
Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Graphite (Synthetic)	Not available	Not available	No

12. ECOLOGICAL INFORMATION

Ecotoxicity: No effects are expected from this material due to its insolubility. Insolubility leads to non-bioavailability.

Mobility: N/A

Persistence and Degradability: N/A

Bioaccumulative Potential: N/A

13. DISPOSAL CONSIDERATIONS

Recommended method of disposal: Treatment, transportation and disposal must be in accordance with applicable Federal, State and Local regulations. Do not flush to surface water or sanitary sewer system.

SAFETY DATA SHEET



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Revision Number: 001.1

14. TRANSPORTATION INFORMATION

US Dept of Transportation (49 CFR): Not Regulated

IATA: Not Regulated

IMDG: Not Regulated

15. REGULATORY INFORMATION

United States Regulatory Information

ACDIH: 2mg/m3 (TVL All forms of graphite except graphite fibers)
CAA Section 112: Not listed
CERCLA: Not Listed
IRAC: Not listed
NPT: Not listed
OSHA: 15mg/m3 (Total Dust) (PEL Synthetic Graphite 5mg/m3 (Respirable fraction) (PEL Synthetic Graphite)
SARA Title III: Not listed
TSCA: Not listed

State Regulations

California PROP 65: Not listed.
MA Substance List: Listed as 2, 4 (graphite, synthetic)
NJRTK Hazardous Substance List: Not listed
PA Hazardous Substance List: Listed (graphite)

Other

DSL – All material listed

WHMIS: The mixture is not specifically listed in the Canadian Transportation of Dangerous Goods regulations.

16. OTHER INFORMATION

Prepared by: Armite Laboratories, Inc.

Original Issue date: April 1, 2015

Disclaimer: The information contained herein is believed to be reliable. However, Armite Laboratories does not assume responsibility for any results obtained by anyone over whose methods Armite has no control. It is the user's responsibility to determine the suitability of any of Armite's products or any production method mentioned herein for a particular use or purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Armite's products. As such, Armite Laboratories specifically disclaims all warranties or guarantees, expressed or implied, as to the suitability of a particular purpose, arising from the sales or use of any Armite product. Armite Laboratories Inc. further disclaims any liability for consequential or incidental damages of any, including loss of profits.



SAFETY DATA SHEET

1. Identification

Product identifier **2-26® Multi-Purpose Precision Lubricant**

Other means of identification

Product code 02004, 02005

Recommended use Multi-purpose lubricant

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.
Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical 800-521-3168

Assistance

Customer Service 800-272-4620

24-Hour Emergency 800-424-9300 (US)

(CHEMTREC) 703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Compressed gas
Health hazards	Skin corrosion/irritation	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing mist or vapor. Avoid breathing gas. Wash thoroughly after handling. Wear protective gloves.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Storage

Store locked up. Protect from sunlight. Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal
Hazard(s) not otherwise classified (HNOC)

Dispose of contents/container in accordance with local/regional/national regulations.
None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates (petroleum), hydrotreated light		64742-47-8	60 - 70
Light mineral oil		8042-47-5	10 - 20
n-Butyl stearate		123-95-5	3 - 5
Carbon dioxide		124-38-9	1 - 3
Petrolatum		8009-03-8	1 - 3
Sorbitan monooleate		68910-94-1	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Diarrhea. Irritation of eyes and mucous membranes. Irritation of nose and throat. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Alcohol resistant foam. Dry chemicals. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors or mists. Avoid breathing gas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid breathing mist or vapor. Avoid breathing gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m3	
Light mineral oil (CAS 8042-47-5)	PEL	5000 ppm 5 mg/m3	Mist.
Petrolatum (CAS 8009-03-8)	PEL	5 mg/m3	Mist.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm	
Light mineral oil (CAS 8042-47-5)	TWA	5000 ppm 5 mg/m3	Inhalable fraction.
n-Butyl stearate (CAS 123-95-5)	TWA	10 mg/m3	
Petrolatum (CAS 8009-03-8)	TWA	5 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3	
	TWA	30000 ppm 9000 mg/m3	
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	5000 ppm 100 mg/m3	
Light mineral oil (CAS 8042-47-5)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Petrolatum (CAS 8009-03-8)	STEL	10 mg/m3	Mist.

Components	Type	Value	Form
	TWA	5 mg/m ³	Mist.
Biological limit values	No biological exposure limits noted for the ingredient(s).		
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.		
Individual protection measures, such as personal protective equipment			
Eye/face protection	Wear safety glasses with side shields (or goggles).		
Skin protection			
Hand protection	Wear protective gloves such as: Nitrile. Neoprene.		
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.		
Respiratory protection	Wear positive pressure self-contained breathing apparatus (SCBA). Air monitoring is needed to determine actual employee exposure levels.		
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.		
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.		

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Aerosol.
Color	Amber.
Odor	Mild petroleum.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-72.4 °F (-58 °C) estimated
Initial boiling point and boiling range	Not available.
Flash point	200 °F (93.3 °C) Tag Closed Cup
Evaporation rate	Slow.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.6 % estimated
Flammability limit - upper (%)	5.5 % estimated
Vapor pressure	1557.7 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.84 estimated
Solubility (water)	Negligible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	392 °F (200 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	88.4 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Prolonged inhalation may be harmful. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Diarrhea. Irritation of nose and throat. Irritation of eyes and mucous membranes. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
2-26® Multi-Purpose Precision Lubricant		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2581.9119 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	58741.2031 ppm, 4 hours estimated
<i>Oral</i>		
LD50	Rat	7007.0728 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Light mineral oil (CAS 8042-47-5) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results	
2-26® Multi-Purpose Precision Lubricant			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia	71386.8828 mg/l, 48 hours estimated
Fish	LC50	Fish	4949.4907 ppm, 96 hours estimated
Components	Species	Test Results	
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	2.2 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	The dispensed liquid product is not a RCRA hazardous waste (See 40 CFR Part 261.20 - 261.33). Empty container can be recycled. Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Dispose in accordance with all applicable regulations.
Hazardous waste code	Not regulated.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
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UN proper shipping name AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)
Class 2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS F-D, S-U
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

SARA 304 Emergency release notification
Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

CERCLA Hazardous Substances: Reportable quantity
Not listed.
Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312	Immediate Hazard - Yes
Hazard categories	Delayed Hazard - No
	Fire Hazard - Yes
	Pressure Hazard - Yes
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. New Jersey Worker and Community Right-to-Know Act
Carbon dioxide (CAS 124-38-9)
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. Massachusetts RTK - Substance List
Carbon dioxide (CAS 124-38-9)
Light mineral oil (CAS 8042-47-5)

US. Pennsylvania Worker and Community Right-to-Know Law
Carbon dioxide (CAS 124-38-9)
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)
Light mineral oil (CAS 8042-47-5)

US. Rhode Island RTK

None.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations**EPA****VOC content (40 CFR 51.100(s))** 97.3 %**Consumer products (40 CFR 59, Subpt. C)** Not regulated**State****Consumer products** This product is regulated as a Multi-Purpose Lubricant. This product is compliant for use in all 50 states.**VOC content (CA)** 0 %**VOC content (OTC)** 0 %**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-12-2014
Revision date	11-20-2014
Prepared by	Allison Cho
Version #	02
Further information	CRC # 591B-C
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 2 Flammability: 3 Instability: 0

NFPA ratings

Disclaimer

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.

SECTION 1: Product and Company Identification

Product Name: **NEW RAPID TAP**
Recommended Use: Multi-purpose metal cutting oil

Manufacturer Information:

Relton Corporation-Chemical Division **Phone: (800)-423-1505**
 317 Rolyn Place **Emergency Number (24 hours):**
 Arcadia, CA 91007-2838 **CHEMTREC 800-424-9300**

SECTION 2: Hazards Identification**GHS Classification:**

Reproductive toxicity: Effects on or via lactation, H362
 Hazardous to the aquatic environment, acute hazard: Category 1, H400
 Hazardous to the aquatic environment, long term hazard: Category 1, H410

GHS Label Elements:

Signal Word: Warning

Hazard Statements:

H362 May cause harm to breast-fed children
 H400 Very toxic to aquatic life
 H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements

P201 Obtain special instructions before use.
 P260 Do not breathe dust/fume/gas/mist/vapors/spray.
 P263 Avoid contact during pregnancy and while nursing.
 P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P308+P313 IF exposed or concerned: Get medical advice/ attention.
 P273 Avoid release to the environment.
 P391 Collect spillage.
 P501 Dispose of contents/container to an appropriate waste treatment facility.

SECTION 3: Composition/Information on Ingredients

Chemical Name	CAS#	%
Mineral oil	64742-54-7	70-90
C14-C16 chlorinated paraffin	85535-85-9	<40
Calcium sulfonate	confidential	2-3

SECTION 4: First Aid Measures**General**

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effects occur. When possible bring along copy of label and SDS to health professional.

Inhalation: May cause mild respiratory tract irritation. Remove individual to fresh air. If breathing is difficult give oxygen.

Skin Contact:	Flush the affected area with water for 15 minutes minimum. Remove exposed or contaminated clothing and shoes. Wash contaminated clothing before reuse. Seek medical attention if irritation develops.
Eye Contact:	Remove contact lenses if present. Rinse eyes thoroughly with water for 15 minutes minimum. Seek medical attention if eye irritation develops or persists.
Ingestion:	If conscious give one cup of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.
Most important symptoms acute or delayed:	Not available
Recommendations for immediate medical care and special treatment:	Not available

SECTION 5: Fire Fighting Measures

Suitable extinguishing media:	Slightly combustible. Use carbon dioxide, extinguishing powder or foam. Avoid water spray.
Unsuitable extinguishing media:	Not available
Specific hazards arising during fire:	Combustion may generate carbon monoxide, carbon dioxide, hydrogen chloride and oxides of sulfur and calcium
Firefighting equipment:	Firefighters should wear suitable protective equipment
Firefighting instructions:	Evacuate personnel to a safe area. Firefighters should use self contained breathing equipment and protective clothing. Keep containers cool with water spray.

SECTION 6: Accidental Release Measures

Personal Precautions:	Wear appropriate protective equipment and clothing during clean up. Keep unprotected persons away.
Environmental Precautions	Do not allow product to enter sewers, surface or ground waters.
Methods and materials for containment and cleanup:	Contain and recover liquid when possible. Absorb with suitable absorbent and place in a chemical waste container for proper disposal (see Section 13, Disposal Considerations).

SECTION 7: Handling and Storage

Precautions for safe handling:	As with all chemical products, avoid contact and wash thoroughly after handling. Do not eat, drink or smoke while using this product. Use only in well-ventilated areas. Remove contaminated clothing and protective equipment before entering eating areas. Pregnant or breast-feeding women must not handle this product.
Conditions for safe storage including incompatibilities:	All personnel who handle this product should be trained in its safe handling. Store tightly closed in cool, dry, ventilated area. Keep out of direct sunlight and away from heat and incompatible materials. Avoid contact with acids, oxidizing agents, and caustics.

SECTION 8: Exposure Controls/Personal Protection**Exposure limit values**

Material	CAS#	List	Type	Value
C14-C17 chlorinated paraffins	85535-85-9			No data available
oil mists		OSHA ACGIH	PEL TLV	5 mg/m3 5 mg/m3

Appropriate Engineering Controls: Provide sufficient mechanical (general/and or local exhaust) ventilation to maintain exposure below exposure guidelines, if applicable, or below levels that cause known, suspected, or adverse effects.

Personal Protective Measures

Eye/face protection: Use chemical goggles or full face shield.

Hand protection: Use chemically-resistant gloves.

Respiratory protection: Not required under normal conditions of use. If airborne concentrations exceed applicable exposure limits, use NIOSH approved respiratory protection.

Thermal hazards: Not available

General hygiene considerations: Handle in accordance with good industrial hygiene and safety practice. Eyewash station and safety shower should be in vicinity of work area.

SECTION 9: Physical and Chemical Properties

Appearance:	Amber colored oily liquid
Odor:	Mild petroleum
Odor threshold:	Not available
pH:	Not applicable
Solubility in water:	Insoluble
Viscosity:	Not available
Specific Gravity:	1.02
Melting point:	Not available
Freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash point:	350F, COC
Evaporation rate:	Not available
Flammability (solid, gas):	Not available
Upper/Lower flammability or explosive limits (%)	
Flammability limit-lower:	Not available
Flammability limit-upper:	Not available
Explosive limit-lower:	Not available
Explosive limit-upper:	Not available
Vapor pressure	<0.01 mmHg @ 20 C
Vapor density	Heavier than air
Partition coefficient (octanol:water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Decomposition temperature	Not available

SECTION 10: Stability and Reactivity

Reactivity:	No reactivity hazards are known.
Chemical Stability:	Material is stable under normal conditions of storage and handling.
Possibility of hazardous reactions:	No hazardous reactions are known under normal conditions of use.
Conditions to avoid:	Keep away from heat, sparks, open flames. Protect from freezing.
Materials to avoid:	Do not store with strong oxidizing agents. Keep away from heat, sparks, open flames, or all sources of ignition.
Hazardous decomposition products:	May include carbon monoxide, carbon dioxide, hydrogen chloride, oxides of calcium and sulfur.

SECTION 11: Toxicological Information**Acute Toxicity:**

C14-C17 chlorinated paraffins: data not available

Petroleum distillates, hydrotreated heavy paraffinic

Ingestion LD50, rat, >5000 mg/kg

Dermal LD50, rabbit, 5000 mg/kg (Category 5)

Inhalation LD50, mg/L/4hr, not available

Skin:	Not expected to be a primary skin irritant. Prolonged or repeated contact may cause irritation.
Eyes:	Not expected to cause eye irritation.
Inhalation:	May cause mild irritation of the respiratory tract with prolonged exposure.
Ingestion:	Ingestion may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.

Delayed and immediate effects of exposure:

Not available.

Carcinogenicity:

IARC: No ingredient is considered to be carcinogenic.

NTP: No ingredient is considered to be carcinogenic.

SECTION 12: Ecological Information

Ecotoxicity:	Contains a substance which causes risk of hazardous effects to the environment. Chloroalkanes C14-C17: LC 50 (Onchorhynchus mykiss): >0.1 mg/L, 96h.
Bioaccumulation potential:	Not available.
Mobility:	Not available.
Other adverse effects:	This material is expected to have adverse effects on marine and plant life. Spills may contaminate drinking water.

SECTION 13: Disposal Considerations

Disposal instructions: Waste disposal must be in accordance with appropriate US Federal, State and Local regulations.

Disposal of contaminated containers or packaging: Dispose of as unused product.

SECTION 14: Transportation Information

UN Number: 3082
UN proper shipping name: Environmentally hazardous substances, liquid, N.O.S, (Alkanes, C14-C17, chloro)
Transport hazard class: 9
Packing group: III
Marine pollutant: Yes

SECTION 15: Regulatory Information

Toxic Substances Control Act (TSCA): All components of this product are on the TSCA Inventory or are exempt from reporting requirements.

SARA 302 Extremely Hazardous Substances: No

SARA 311/312 Classification:

Immediate hazard	Yes
Delayed hazard	Yes
Fire hazard	No
Reactive hazard	No
Pressure hazard	No

SARA 313 Components: No

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm

HMIS Information:

Health	1
Flammability	1
Reactivity	0
Personal Protection	C

**SECTION 16: Other Information**

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Prepared by: Dr. William M. Fruscella, Consulting Chemist

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SAFETY DATA SHEET

1. Identification

Product identifier	Heavy Duty Silicone™ Lubricant
Other means of identification	
Product code	05074, 05174
Recommended use	Silicone-based multi-purpose lubricant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Extinguish all flames, pilot lights and heaters. Pressurized container: Do not pierce or burn, even after use. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing mist or vapor. Wash thoroughly after handling. Wear protective gloves and eye/face protection. Avoid release to the environment.

Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Collect spillage.
Storage	Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	30 - 40
Liquefied Petroleum Gas		68476-86-8	20 - 30
3-Methylhexane		589-34-4	5 - 10
Naphtha (petroleum), hydrotreated light		64742-49-0	5 - 10
n-Heptane		142-82-5	5 - 10
Methylcyclohexane		108-87-2	3 - 5
Polydimethylsiloxane		63148-62-9	3 - 5
Cyclohexane		110-82-7	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Carbon dioxide (CO ₂). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

General fire hazards Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Remove all possible sources of ignition in the surrounding area. Many vapors are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities Level 3 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Avoid spark promoters. These alone may be insufficient to remove static electricity. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3 300 ppm
Methylcyclohexane (CAS 108-87-2)	PEL	2000 mg/m3 500 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3 500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
3-Methylhexane (CAS 589-34-4)	STEL	500 ppm
	TWA	400 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Cyclohexane (CAS 110-82-7)	TWA	100 ppm
Methylcyclohexane (CAS 108-87-2)	STEL	500 ppm
	TWA	400 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
Methylcyclohexane (CAS 108-87-2)	TWA	1600 mg/m3
		400 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower should be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear protective gloves such as: Nitrile. Polyvinyl alcohol (PVA). Viton®.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Aerosol.

Color

Water-white.

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point	-195.9 °F (-126.6 °C) estimated
Initial boiling point and boiling range	132.9 °F (56.1 °C) estimated
Flash point	< 0 °F (< -17.8 °C) Tag Closed Cup
Evaporation rate	Fast.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.1 % estimated
Flammability limit - upper (%)	12.8 % estimated
Vapor pressure	1518.9 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.69 estimated
Solubility (water)	Slightly soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	539.6 °F (282 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	97 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Aldehydes. Alkalies. Amines. Ammonia. Halogens. Peroxides. Reducing agents. Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Headache. May cause drowsiness and dizziness. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
Heavy Duty Silicone™ Lubricant		
Acute		
Dermal		
LD50	Rabbit	5404 mg/kg estimated
Inhalation		
LC50	Rat	100 mg/l, 4 Hours estimated

Product	Species	Test Results
Oral LD50	Rat	7617 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not available.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not available.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.

12. Ecological information

Product	Species	Test Results	
Ecotoxicity Toxic to aquatic life with long lasting effects.			
Heavy Duty Silicone™ Lubricant			
Aquatic			
Crustacea	EC50	Daphnia	79213.0703 mg/l, 48 hours estimated
<i>Acute</i>			
Fish	LC50	Fish	22.6832 mg/l, 96 hours estimated
Components			
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	10294 - 17704 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
Cyclohexane (CAS 110-82-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	23.03 - 42.07 mg/l, 96 hours
Methylcyclohexane (CAS 108-87-2)			
Aquatic			
Fish	LC50	Striped bass (Morone saxatilis)	5.8 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.1 - 2.98 mg/l, 96 hours

Components	Species	Test Results
Polydimethylsiloxane (CAS 63148-62-9)		
Aquatic		
Fish	LC50	Channel catfish (<i>Ictalurus punctatus</i>)
		2.36 - 4.15 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Cyclohexane	3.44
Methylcyclohexane	3.61
n-Heptane	4.66

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.

ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.	
SARA 304 Emergency release notification	Not regulated.	
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	Cyclohexane (CAS 110-82-7)	
CERCLA Hazardous Substance List (40 CFR 302.4)	Acetone (CAS 67-64-1)	Listed.
	Cyclohexane (CAS 110-82-7)	Listed.
CERCLA Hazardous Substances: Reportable quantity	Acetone (CAS 67-64-1)	5000 LBS
	Cyclohexane (CAS 110-82-7)	1000 LBS
	Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.	
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.	
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number	Acetone (CAS 67-64-1)	6532
Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))	Acetone (CAS 67-64-1)	35 %WV
DEA Exempt Chemical Mixtures Code Number	Acetone (CAS 67-64-1)	6532
FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace	Acetone (CAS 67-64-1)	Low priority
Food and Drug Administration (FDA)	Not regulated.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)	Section 311/312	
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No	
SARA 302 Extremely hazardous substance	No	
US state regulations		
US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))	Acetone (CAS 67-64-1) Liquefied Petroleum Gas (CAS 68476-86-8) Naphtha (petroleum), hydrotreated light (CAS 64742-49-0)	

US. New Jersey Worker and Community Right-to-Know Act

3-Methylhexane (CAS 589-34-4)
 Acetone (CAS 67-64-1)
 Methylcyclohexane (CAS 108-87-2)
 n-Heptane (CAS 142-82-5)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

3-Methylhexane (CAS 589-34-4)
 Acetone (CAS 67-64-1)
 Cyclohexane (CAS 110-82-7)
 Methylcyclohexane (CAS 108-87-2)
 n-Heptane (CAS 142-82-5)

US. New Jersey Worker and Community Right-to-Know Act

Cyclohexane (CAS 110-82-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
 Cyclohexane (CAS 110-82-7)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
 Cyclohexane (CAS 110-82-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Toluene (CAS 108-88-3)
 3-Methylhexane (CAS 589-34-4)
 Methylcyclohexane (CAS 108-87-2)
 n-Heptane (CAS 142-82-5)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2)	Listed: February 27, 1987
Cumene (CAS 98-82-8)	Listed: April 6, 2010
Ethanal (CAS 75-07-0)	Listed: April 1, 1988
Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
Toluene (CAS 108-88-3)	Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3)	Listed: August 7, 2009
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US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)	Listed: December 26, 1997
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Volatile organic compounds (VOC) regulations**EPA**

VOC content (40 CFR 51.100(s)) 59.5 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as a Silicone Based Multi-Purpose Lubricant. This product is compliant for use in all 50 states.

VOC content (CA) 59.5 %

VOC content (OTC) 59.5 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-07-2015
Revision date	09-25-2015
Prepared by	Allison Cho
Version #	02
Further information	Not available.
HMIS® ratings	Health: 2 Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 2 Flammability: 4 Instability: 0

NFPA ratings



Disclaimer

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

1. Identification

Product identifier	TrueTap® Wax Stick
Other means of identification	
Product code	03480
Recommended use	Multi-purpose lubricant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Microcrystalline Wax		63231-60-7	80 - 90
Distillates (petroleum), hydrotreated heavy naphthenic		64742-52-5	20 - 30

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
-------------------	---

Skin contact	Remove contaminated clothing. Wash affected area with mild soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Most important symptoms/effects, acute and delayed	May cause skin irritation. Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Not established.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Cool containers exposed to heat with water spray and remove container, if no risk is involved. Prevent fire extinguishing water from contaminating surface water or the ground water system.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece, vermiculite). Sweep up and shovel into suitable containers for disposal. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands after handling and before eating. Use care in handling/storage. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Store away from incompatible materials (see Section 10 of the SDS). Keep away from heat, sparks and open flame. Do not store container below 40 °F. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	PEL	5 mg/m ³	Mist.
		2000 mg/m ³	
		500 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	TWA	5 mg/m ³	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	Ceiling	1800 mg/m ³	
	STEL	10 mg/m ³	Mist.
	TWA	5 mg/m ³	Mist.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear protective gloves such as: Nitrile. Neoprene.

Other

Wear suitable protective clothing.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Avoid contact with eyes, skin, and clothing. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance****Physical state**

Solid.

Form

Wax.

Color

Amber.

Odor

None.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

172 °F (77.8 °C)

Initial boiling point and boiling range

> 700 °F (> 371.1 °C)

Flash point

> 415 °F (> 212.8 °C) Pensky-Martens Closed Cup

Evaporation rate

Slow.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits**Flammability limit - lower (%)**

Not available.

Flammability limit - upper (%)

Not available.

Vapor pressure

< 0.1 mm Hg @ 68 °F

Vapor density

< 1 (air = 1)

Relative density

0.85

Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. High temperatures.
Incompatible materials	Oxidizing agents. Strong acids. Strong bases.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not available.

Product	Species	Test Results
TrueTap® Wax Stick		
Acute		
Dermal		
LD50	Rabbit	10000 mg/kg estimated
Oral		
LD50	Rat	25000 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

Further information

This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species		Test Results
TrueTap® Wax Stick			
Aquatic			
Crustacea	EC50	Daphnia	5000 mg/l, 48 hours estimated
Fish	LC50	Fish	25000 mg/l, 96 hours estimated
Components	Species		Test Results
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1000 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5000 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products This product is not a RCRA hazardous waste (See 40 CFR Part 261.20 – 261.33). Empty containers may be recycled. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.

Hazardous waste code Not regulated.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)

US. Massachusetts RTK - Substance List

None.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

None.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 0 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products Not regulated

VOC content (CA) 0 %

VOC content (OTC) 0 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 04-24-2015
Prepared by Allison Cho
Version # 01
Further information Not available.
HMIS® ratings Health: 1
Flammability: 0
Physical hazard: 0
Personal protection: B

NFPA ratings Health: 1
Flammability: 0
Instability: 0

NFPA ratings



Disclaimer The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



Revision date: Initial version
Date of issue: 04.28.2015

Page: 1/11

Trade name: Noalox[®] Anti Oxidant

SECTION 1: Identification

Product identifier: Noalox[®] Anti Oxidant.
Synonyms: None available.
Product Code Number: 30-024, 30-026, 30-030, 30-031, 30-032, 30-040.
SDS number: ID019
Recommended use: Anti oxidant.
Recommended restrictions: Uses other than those recommended.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria.

Health hazards

Specific target organ toxicity - repeated exposure, Category 1.

Environmental hazards

Acute aquatic toxicity, Category 2.
Chronic aquatic toxicity, Category 2.

GHS Signal word: DANGER.

GHS Hazard statement(s): Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
- Response:** P314 - Get medical advice/ attention if you feel unwell.
P391 - Collect spillage.
- Storage:** No storage related statements required.
- Disposal:** P501 - Dispose of contents/ container to an approved waste disposal plant.

Hazard(s) not otherwise Classified (HNOC):

None known.

Percentage of ingredient(s) of unknown acute toxicity:

23% of the mixture consists of ingredients of unknown acute toxicity (oral/dermal/inhalation).

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Zinc Dust	7440-66-6	15 - 20 %
Hydrophillic Fumed Silica	7631-86-9	1 – 5%

Note: The balance of the ingredients are not classified as hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: In case of contact, Wash skin with soap and for at least 15 minutes. Remove contaminated clothing and thoroughly clean before reuse. Get medical attention if symptoms persist.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms persist.

Ingestion: Induce vomiting and consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: None normally expected. Upon prolonged contact, may cause temporary eye discomfort and organ damage.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Use dry chemical, carbon dioxide or foam.

Unsuitable extinguishing media: Do not use water. Water reacts with zinc dust.

Specific hazards arising from the chemical: Water or foam may cause a frothing reaction. Combustion products - Carbon monoxide, Carbon dioxide.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies. Keep fire exposed containers cool with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Wipe up, shovel or vacuum spilled material. Clean up spills immediately. Use absorbent media. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Keep away from children, infants and pets. Keep in dry location. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Store in dry conditions at temperatures between 40 - 120 F.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Zinc Dust	No data available	No data available
Hydrophillic Fumed Silica	80 mg/m ³ /(% SiO ₂)	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Zinc Dust	No data available	No data available
Hydrophillic Fumed Silica	No data available	No data available

NIOSH Exposure Limits		
Substance	TWA	STEL

Zinc Dust	No data available	No data available
Hydrophillic Fumed Silica	6 mg/m ³	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep dust below exposure limits.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant safety glasses or splash goggles are recommended.

Skin and Hand protection: None normally required. Use neoprene gloves if necessary.

Respiratory protection: Where protection from nuisance levels of dusts are desired, use type N95 (US) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH/OSHA.

Other: An eye fountain in work area is recommended.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

- Physical state:** Paste
- Form:** Gray solid paste.
- Color:** Gray.
- Odor:** Mild odor.
- Odor threshold:** No data available
- pH:** 6.5 – 8.0
- Melting point/freezing point:** No data available
- Initial boiling point and boiling range:** > 500°F
- Flash point:** 310°F
- Evaporation rate:** No data available
- Flammability (solid, gas):** Not applicable
- Upper/lower flammability or explosive limits**
 - Flammability limit – lower (%):** Not applicable
 - Flammability limit – upper (%):** Not applicable
 - Explosive limit – lower (%):** Not applicable
 - Explosive limit – upper (%):** Not applicable
- Vapor pressure:** No data available
- Vapor density:** No data available
- Relative Density:** 1.04
- Solubility(ies):** Moderate.
- Partition coefficient (n-octanol/water):** No data available
- Auto-ignition temperature:** No data available

Decomposition temperature: No data available
Viscosity: No data available
Other information:
% Volatile by volume: None
Percent solids by weight: ~ 100%

SECTION 10: Stability and Reactivity

Reactivity: Not chemically reactive.
Chemical stability: Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: Avoid conditions of moisture or high humidity.
Incompatible materials: Avoid strong oxidizers, strong acids and water.
Hazardous decomposition Products: Excessive heat and burning may release oxides of carbon.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: Skin contact is a potential route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
 None normally expected.

Delayed and immediate effects and chronic effects from short or long-term exposure:
 Upon prolonged contact, may cause temporary eye discomfort and damage to organs.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Zinc Dust	LD ₅₀ Oral (Rat)	No data available
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation	No data available
Hydrophilic Fumed Silica	LD ₅₀ Oral (Rat)	3160 mg/kg
	LD ₅₀ Intravenous (Rat)	15 mg/kg
	LC ₅₀ Inhalation (Rat)	> 200 gm/m ³ (1H)

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation:	No information available on the mixture, however none of the components have been classified to cause skin corrosion/irritation (or are below the concentration threshold for classification).
Serious eye damage/eye irritation:	No information available on the mixture, however none of the components have been classified to cause eye damage/irritation (or are below the concentration threshold for classification).
Respiratory sensitization:	No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).
Skin sensitization:	No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Repeat exposure:**

No information available on the mixture, however Hydrophilic Fumed Silica has been classified for STOT RE and may cause damage to organs over prolonged periods.

Aspiration hazard:

No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).

Further information:

No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Zinc Dust	LC ₅₀	Fish	No data available
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available
Hydrophilic Fumed Silica	LC ₅₀	Fish	No data available
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

Contact a licensed professional waste disposal service to dispose of this material.

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section

9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

Identification number	UN 3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (contains Zinc dust)
Class / Division	9
Packing group	III
Poison Inhalation Hazard	No

IMDG

Identification number	UN 3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (contains Zinc dust)
Class / Division	9
Packing group	III

IATA (Country variations may apply)

Identification number	UN 3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (contains Zinc dust)
Class / Division	9
Packing group	III

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

**SARA Title III
Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):** None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes
Chronic Health Hazard: Yes
Fire Hazard: No
Pressure Hazard: No
Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):
This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: Zinc powder (stabilized).

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): Silica, crystalline (airborne particles of respirable size) is listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: Zinc powder (stabilized) and Silicon dioxide are listed on the Massachusetts Right to Know List.

New Jersey Right to Know: Zinc powder (stabilized) and Silicon dioxide are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Zinc powder (stabilized) and Silicon dioxide are listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2B – Very Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: April 28, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **CARLON ELECTRICAL PRODUCTS ALL WEATHER QUICKSET CLEAR CEMENT**
Product Numbers: VC9981P, VC9982, VC9983, VC9984, VC9983, VC9985C, VC9983C
Product Use: Cement for PVC Plastic Pipe
Formula: PVC Resin in Solvent Solution
Synonyms: PVC Plastic Pipe Cement
Firm Name & Mailing Address: CARLON ELECTRICAL PRODUCTS c/o OATEY CO. 4700 West 160th Street
P.O. Box 35906 Cleveland, Ohio 44135, U.S.A.
<http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: August 25, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS:</u>	<u>%wt/wt:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Tetrahydrofuran	40 - 55%	109-99-9	50 ppm(skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
PVC Resin (Non-hazardous)	12 - 24%	9002-86-2	10 mg/m3	15 mg/m3	None
Acetone	10 - 25%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None
Cyclohexanone	10 - 20%	108-94-1	20 ppm(skin) 50 ppm STEL	50 ppm	None
Amorphous Fumed Silica (Non-hazardous)	1 - 5%	112945-52-5	10 mg/m3	None Established	None
OSHA Hazard Classification:					Flammable, irritant, organ effects

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 0 - 5 Degrees F. (-18 - -15 Degrees C / PMCC
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Media: Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye Protection: Safety glasses with sideshields or safety goggles.
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not Applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 81-85%
Solubility In Water: Negligible
pH: Not Applicable
Specific Gravity: 0.94 +/- 0.01 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Clear Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Incompatibility/ Materials To Avoid: Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m3/8 hours
Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours

SECTION 11 (Continued)

Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.
Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone and tetrahydrofuran are generally thought not to be mutagenic.
Reproductive Toxicity: Cyclohexanone has been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.
VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.
VOC Level: 600 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: U002, U057, U213
EPA Hazardous Waste ID Number: D001, F003
EPA Hazard Waste Class: Ignitable Waste.

SECTION 14 TRANSPORT INFORMATION

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)

Proper Shipping Name: Consumer Commodity Adhesives
Hazard Class/Packing Group: ORM-D 3, PGII
UN/NA Number: None UN1133
Hazard Labels: None Flammable Liquid

IMDG

Proper Shipping Name: Adhesives Adhesives
Hazard Class/Packing Group: 3, II 3, II
UN Number: UN1133 UN1133
Label: None (Limited Quantities are excepted from labeling) Class 3 (Flammable Liquid)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains no chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (55% maximum) of 1,000 lbs, is 1,818 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of to cause cancer. Under normal Use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 to minimize exposure to these chemicals.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATIONPRODUCT NAME: **CANTEX ALL WEATHER CLR Low VOC Cement for Plastic Pipe**

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

SUPPLIER:

MANUFACTURER:

IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4	Acute Toxicity: None Known	Flammable Liquid Category 2
Skin Irritation: Category 3	Chronic Toxicity: None Known	
Skin Sensitization: NO		
Eye: Category 2		

GHS LABEL:



Signal Word:

Danger

WHMIS CLASSIFICATION:

CLASS B, DIVISION 2

CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H335: May cause respiratory irritation	P280: Wear protective gloves/protective clothing/eye protection/face protection
H336: May cause drowsiness or dizziness	P337+P313: Get medical advice/attention
H351: Suspected of causing cancer	P403+P233: Store in a well ventilated place. Keep container tightly closed
EUH019: May form explosive peroxides	P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH	CONCENTRATION
			Pre-registration Number	% by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	30 - 50
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	4 - 15
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	8 - 17
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 15

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon, hydrogen chloride and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.**Monitoring:** Maintain breathing zone airborne concentrations below exposure limits.**Personal Protective Equipment (PPE):****Eye Protection:** Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.**Skin Protection:** Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.**Respiratory Protection:** Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, medium syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity :	0.934 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Medium bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: Category 2 Carcinogen

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi	R66:	Repeated exposure may cause skin dryness or cracking
Risk Phrases:	R11: Highly flammable. R36/37: Irritating to eyes and respiratory system.	R67:	Vapors may cause drowsiness and dizziness
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.	S25:	Avoid contact with eyes.
		S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S33:	Take precautionary measures against static discharges.

SECTION 16 - OTHER INFORMATION

Specification Information:		All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
Department issuing data sheet:	Safety Health & Environmental Affairs	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	1/2/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **CARLON ALL WEATHER ENT BLUE PVC CEMENT**
Product Numbers: VC9992
Product Use: Cement for PVC Plastic Pipe
Formula: PVC Resin in Solvent Solution
Synonyms: PVC Plastic Pipe Cement
Firm Name & Mailing Address: CARLON ELECTRICAL PRODUCTS c/o OATEY CO. 4700 West 160th Street
P.O. Box 35906 Cleveland, Ohio 44135, U.S.A.
<http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: September 30, 2005

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS:</u>	<u>%wt/wt :</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Tetrahydrofuran	40 - 70%	109-99-9	50 ppm(skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
PVC Resin (Non-hazardous)	10 - 20%	9002-86-2	10 mg/m3	15 mg/m3	None
Cyclohexanone	10 - 20%	108-94-1	20 ppm(skin) 50 ppm STEL	50 ppm	None
Amorphous Fumed Silica (Non-hazardous)	1 - 4%	112945-52-5	10 mg/m3	None Established	None

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview:
Clear blue liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4 FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 0 - 5 Degrees F. (-18 - -15 Degrees C / PMCC
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing: Use dry chemical, CO₂, or foam to extinguish fire. Cool fire
Media: exposed container with water. Water may be ineffective as an
extinguishing agent.
Special Fire: Firefighters should wear positive pressure self-contained
Fighting: breathing apparatus and full protective clothing for fires in
Procedure: areas where chemicals are used or stored
Unusual Fire and: Extremely flammable liquid. Keep away from heat and all
Explosion: sources of ignition including sparks, flames, lighted
Hazards: cigarettes and pilot lights. Containers may rupture or
explode in the heat of a fire. Vapors are heavier than air
and may travel to a remote ignition source and flash back.
This product contains tetrahydrofuran that may form explosive
organic peroxide when exposed to air or light or with age.
Hazardous: Combustion will produce toxic and irritating vapors including
Decomposition: carbon monoxide, carbon dioxide and hydrogen chloride.
Products:

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or: Remove all sources of ignition and ventilate area. Stop leak if it
Leak: can be done without risk. Personnel cleaning up the spill should
Procedures: wear appropriate personal protective equipment, including respirators
if vapor concentrations are high. Soak up spill with an inert
absorbent such as sand, earth or other non-combusting material. Put
absorbent material in covered, labeled metal containers. Prevent
liquid from entering watercourses, sewers and natural waterways.
Report releases to authorities as required. See Section 13 for
disposal information.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors
or mists. Use with adequate ventilation (equivalent to outdoors).
Wash thoroughly after handling. Do not eat, drink or smoke in the
work area. Keep product away from heat, sparks, flames and all other
sources of ignition. No smoking in storage or use areas. Keep
containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible
materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous.
Follow all MSDS precautions in handling empty containers. Do not cut
or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining
emissions at the point of use below recommended exposure limits. If
used in enclosed area, use exhaust fans. Exhaust fans should be
explosion-proof or set up in a way that flammable concentrations of
solvent vapors are not exposed to electrical fixtures or hot
surfaces.
Respiratory: For operations where the exposure limit may be exceeded, a NIOSH
Protection: approved organic vapor respirator or supplied air respirator is
recommended. Equipment selection depends on contaminant type and
concentration, select in accordance with 29 CFR 1910.134 and good
industrial hygiene practice. For firefighting, use self-contained
breathing apparatus.
Skin: Rubber gloves are suitable for normal use of the product. For long
Protection: exposures chemical resistant gloves may be required such as
4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye Safety glasses with side shields or safety goggles.
Protection:
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not determined
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 80-85%
Solubility In Water: Negligible
pH: Not determined
Specific Gravity: 0.94 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Clear Blue Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide, carbon dioxide and hydrogen
Products: chloride.
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and
sodium hypochlorite) and hydrogen peroxides. May attack
plastic, resins and rubber.
Hazardous Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory
irritation, coughing, headache, dizziness, dullness, nausea,
shortness of breath and vomiting. High concentrations may cause
central nervous system depression, narcosis and unconsciousness.
May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain.
Cyclohexanone may be absorbed through the skin causing effects
similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation
with redness, stinging and tearing of the eyes. May cause eye
damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and
diarrhea. Aspiration during swallowing or vomiting can cause
chemical pneumonia and lung damage. May cause kidney and liver
damage.
Chronic Prolonged or repeated overexposure cause dermatitis and damage
Toxicity: to the kidney, liver, lungs and central nervous system.
Toxicity Data: Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours

SECTION 11 (Continued)

Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.
Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Tetrahydrofuran is generally thought not to be mutagenic.
Reproductive Toxicity: Cyclohexanone has been shown to cause embryofetal toxicity and birth defects in laboratory animals. Tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.
VOC Level: 650 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: U002, U057, U213
EPA Hazardous Waste ID Number: D001, F003
EPA Hazard Waste Class: Ignitable Waste.

SECTION 14 TRANSPORT INFORMATION

DOT	<u>Less than 1 Liter (0.3 gal)</u>	<u>Greater than 1 Liter (0.3 gal)</u>
Proper Shipping Name:	Consumer Commodity	Adhesives
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1133
Hazard Labels:	None	Flammable Liquid
IMDG		
Proper Shipping Name:	Adhesives	Adhesives
Hazard Class/Packing Group:	3, II	3, II
UN Number:	UN1133	UN1133
Label:	None (Limited Quantities are excepted from labeling)	Class 3 (Flammable Liquid)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>% by wt.</u>
None		

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (70% maximum) of 1,000 lbs, is 1,430 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of to cause cancer. Under normal Use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 to minimize exposure to these chemicals.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B. Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **CARLON ELECTRICAL PRODUCTS MEDIUM GRAY LO-VOC PVC CEMENT**
Product Numbers: VC9LV2, VC9LV3, VC9LV3L, VC9LV4, VC9LV4-24, VC9LV4L-24
Product Use: Cement for PVC Plastic Pipe
Formula: PVC Resin in Solvent Solution
Synonyms: PVC Plastic Pipe Cement
Firm Name & Mailing Address: CARLON ELECTRICAL PRODUCTS c/o OATEY CO. 4700 West 160th Street
P.O. Box 35906, Cleveland, Ohio 44135, U.S.A.
<http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532.
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: April 4, 2007

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS:</u>	<u>%:wt/wt</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Tetrahydrofuran	35 - 50%	109-99-9	50 ppm(skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
Methyl Ethyl Ketone	10 - 20%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
PVC Resin (Non-hazardous)	10 - 18%	9002-86-2	10 mg/m3	15 mg/m3	None
Acetone	10 - 20%	67-64-1	500 ppm 750 ppm	1000 ppm	None
Cyclohexanone	7 - 15%	108-94-1	20 ppm(skin) 50 ppm STEL	50 ppm	None
Amorphous Fumed Silica (Non-hazardous)	1 - 5%	112945-52-5	10 mg/m3	None	None
OSHA Hazard Classification:				Established	Flammable, irritant, organ effects

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Gray liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 0 to 5 Degrees F. (-18 to -15 Degrees C) / PMCC
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Use dry chemical, CO2, or foam to extinguish fire. Cool fire
Media: exposed container with water. Water may be ineffective as an
extinguishing agent.
Special Fire Firefighters should wear positive pressure self-contained
Fighting breathing apparatus and full protective clothing for fires in
Procedure: areas where chemicals are used or stored
Unusual Fire and Extremely flammable liquid. Keep away from heat and all
Explosion sources of ignition including sparks, flames, lighted
Hazards: cigarettes and pilot lights. Containers may rupture or
explode in the heat of a fire. Vapors are heavier than air
and may travel to a remote ignition source and flash back.
This product contains tetrahydrofuran that may form explosive
organic peroxide when exposed to air or light or with age.
Hazardous Combustion will produce toxic and irritating vapors including
Decomposition carbon monoxide, carbon dioxide and hydrogen chloride.
Products:

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Remove all sources of ignition and ventilate area. Stop leak if it
Leak can be done without risk. Personnel cleaning up the spill should
Procedures: wear appropriate personal protective equipment, including respirators
if vapor concentrations are high. Soak up spill with an inert
absorbent such as sand, earth or other non-combusting material. Put
absorbent material in covered, labeled metal containers. Prevent
liquid from entering watercourses, sewers and natural waterways.
Report releases to authorities as required. See Section 13 for
disposal information.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors
or mists. Use with adequate ventilation (equivalent to outdoors).
Wash thoroughly after handling. Do not eat, drink or smoke in the
work area. Keep product away from heat, sparks, flames and all other
sources of ignition. No smoking in storage or use areas. Keep
containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible
materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous.
Follow all MSDS precautions in handling empty containers. Do not cut
or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining
emissions at the point of use below recommended exposure limits. If
used in enclosed area, use exhaust fans. Exhaust fans should be
explosion-proof or set up in a way that flammable concentrations of
solvent vapors are not exposed to electrical fixtures or hot
surfaces.
Respiratory For operations where the exposure limit may be exceeded, a NIOSH
Protection: approved organic vapor respirator or supplied air respirator is
recommended. Equipment selection depends on contaminant type and
concentration, select in accordance with 29 CFR 1910.134 and good
industrial hygiene practice. For firefighting, use self-contained
breathing apparatus.
Skin Rubber gloves are suitable for normal use of the product. For long
Protection: exposures chemical resistant gloves may be required such as

4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye Safety glasses with side shields or safety goggles.

Protection:

Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 70 - 80%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.94 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Gray Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide, carbon dioxide and hydrogen
Products: chloride.
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and
sodium hypochlorite) and hydrogen peroxides. May attack
plastic, resins and rubber.
Hazardous Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory
irritation, coughing, headache, dizziness, dullness, nausea,
shortness of breath and vomiting. High concentrations may cause
central nervous system depression, narcosis and unconsciousness.
May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl
ethyl ketone and cyclohexanone may be absorbed through the skin
causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation
with redness, stinging and tearing of the eyes. May cause eye
damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and
diarrhea. Aspiration during swallowing or vomiting can cause
chemical pneumonia and lung damage. May cause kidney and liver
damage.
Chronic Prolonged or repeated overexposure cause dermatitis and damage
Toxicity: to the kidney, liver, lungs and central nervous system.
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m3/8 hours
Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours

SECTION 11 (Continued)

Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m³/8 hours
Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to Tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran (THF) as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.
Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.
Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.
VOC Level: 460 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: U002, U057, U159, U213
EPA Hazardous Waste ID Number: D001, D035, F003, F005
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT	<u>Less than 1 Liter (0.3 gal)</u>	<u>Greater than 1 Liter (0.3 gal)</u>
Proper Shipping Name:	Consumer Commodity	Adhesives
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1133
Hazard Labels:	None	Flammable Liquid

IMDG

Proper Shipping Name:	Adhesives	Adhesives
Hazard Class/Packing Group:	3, II	3, II
UN Number:	UN1133	UN1133
Label:	None (Limited Quantities are excepted from labeling)	Class 3 (Flammable Liquid)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product does not contain chemicals regulated under SARA Section 313.

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (50% maximum) of 1,000 lbs, is 2,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of to cause cancer. Under normal Use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 to minimize exposure to these chemicals.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

1. Identification

Product identifier	Regulare Clear Cement
Other means of identification	
Product code	1100EB
Synonyms	Part Numbers: 31016RB, 31958RB, 31960RB, 31961RB, 31959RB
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Furan, Tetrahydro-	109-99-9	40-60
Acetone	67-64-1	10-25
Polyvinyl chloride	9002-86-2	12-20
Cyclohexanone	108-94-1	5-15
Methyl ethyl ketone	78-93-3	5-15

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3	
		200 ppm	
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3	
		200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm
	TWA	100 mg/m3
Cyclohexanone (CAS 108-94-1)	TWA	25 ppm
	STEL	735 mg/m3
Furan, Tetrahydro- (CAS 109-99-9)	TWA	250 ppm 590 mg/m3
	STEL	200 ppm 885 mg/m3
Methyl ethyl ketone (CAS 78-93-3)	TWA	300 ppm 590 mg/m3
	TWA	200 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
		Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Face shield is recommended. Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Opaque liquid.
Color	Gray.
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	-4.0 °F (-20.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.9 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	80 - 500 cP
Other information	
VOC (Weight %)	488 g/l SCAQMD 1168/M316A

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)

3 Not classifiable as to carcinogenicity to humans.

Polyvinyl chloride (CAS 9002-86-2)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)

Cancer

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

May be fatal if swallowed and enters airways.

Chronic effects

Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)

-0.24

Cyclohexanone (CAS 108-94-1)

0.81

Furan, Tetrahydro- (CAS 109-99-9)

0.46

Methyl ethyl ketone (CAS 78-93-3)

0.29

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Methyl ethyl ketone RQ = 37202 LBS, Acetone RQ = 37397 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV
Methyl ethyl ketone (CAS 78-93-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)
Polyvinyl chloride (CAS 9002-86-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-28-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CANTEX #99 CLEAR Low VOC PVC Plastic Pipe Cement
PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe
SUPPLIER:
MANUFACTURER: IPS Corporation
 17109 South Main Street, Gardena, CA 90248-3127
 P.O. Box 379, Gardena, CA 90247-0379
 Tel. 1-310-898-3300
EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4	Acute Toxicity: None Known	Flammable Liquid Category 2
Skin Irritation: Category 3	Chronic Toxicity: None Known	
Skin Sensitization: NO		
Eye: Category 2		

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	5 - 15
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	30 - 45
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 15
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	15 - 35

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
 * Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
 # indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog. **HMIS** **NFPA** **0-Minimal**
Unsuitable Extinguishing Media: Water spray or stream. **Health** **2** **2** **1-Slight**
Exposure Hazards: Inhalation and dermal contact **Flammability** **3** **3** **2-Moderate**
Combustion Products: Oxides of carbon, hydrogen chloride and smoke **Reactivity** **0** **0** **3-Serious**
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks. **PPE** **B** **4-Severe**

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, regular syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity:	0.894 @ 23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Regular bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects:

Category 2 Carcinogen

Toxicity:

	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping**DOT Limited Quantity:** Up to 5L per inner packaging, 30 kg gross weight per package.**Consumer Commodity:** Depending on packaging, these quantities may qualify under DOT as "ORM-D" .**TDG INFORMATION**

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi	R66:	Repeated exposure may cause skin dryness or cracking
Risk Phrases:	R11: Highly flammable. R20-Harmful by inhalation. R36/37: Irritating to eyes and respiratory system.	R67:	Vapors may cause drowsiness and dizziness
Safety Phrases:	S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes.	S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S33:	Take precautionary measures against static discharges.
		S46:	If swallowed, seek medical advise immediately and show this container or label.

SECTION 16 - OTHER INFORMATION

Specification Information:		All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
Department issuing data sheet:	Safety Health & Environmental Affairs	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	1/2/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **CARLON ELECTRICAL PRODUCTS CLEAR PRIMER - NSF LISTED**
Product Numbers: VC9902, VC9903
Product Use: Primer for Cementing Plastic Pipe
Formula: See Section 2
Synonyms: Cleaner
Firm Name & Mailing Address: CARLON ELECTRICAL PRODUCTS c/o OATEY CO. 4700 West 160th Street
P.O. Box 35906 Cleveland, Ohio 44135, U.S.A.
<http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: September 22, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS:</u>	<u>%wt/wt:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Methyl Ethyl Ketone	25 - 80%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
Acetone	0 - 40%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None
Tetrahydrofuran	5 - 30%	109-99-9	50 ppm(skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
Cyclohexanone	10 - 20%	108-94-1	20 ppm(skin) 50 ppm STEL	50 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Clear liquid with a sharp, penetrating odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT
Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 0 - 5 Degrees F. (-18 to -15 Degrees C) / PMCC
Flammability: LEL = 1.8 % Volume, UEL = 11.5 % Volume
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. Cool fire
Media: exposed container with water. Water may be ineffective as an
extinguishing agent.
Special Fire: Firefighters should wear positive pressure self-contained
Fighting: breathing apparatus and full protective clothing for fires in
Procedure: areas where chemicals are used or stored
Unusual Fire and: Extremely flammable liquid. Keep away from heat and all
Explosion: sources of ignition including sparks, flames, lighted
Hazards: cigarettes and pilot lights. Containers may rupture or
explode in the heat of a fire. Vapors are heavier than air
and may travel to a remote ignition source and flash back.
This product contains tetrahydrofuran that may form explosive
organic peroxide when exposed to air or light or with age.
Hazardous: Combustion will produce toxic and irritating vapors including
Decomposition: carbon monoxide and carbon dioxide.
Products:

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or: Remove all sources of ignition and ventilate area. Stop leak if it
Leak: can be done without risk. Personnel cleaning up the spill should
Procedures: wear appropriate personal protective equipment, including respirators
if vapor concentrations are high. Soak up spill with an inert
absorbent such as sand, earth or other non-combusting material. Put
absorbent material in covered, labeled metal containers. Prevent
liquid from entering watercourses, sewers and natural waterways.
Report releases to authorities as required. See Section 13 for
disposal information.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors
or mists. Use with adequate ventilation (equivalent to outdoors).
Wash thoroughly after handling. Do not eat, drink or smoke in the
work area. Keep product away from heat, sparks, flames and all other
sources of ignition. No smoking in storage or use areas. Keep
containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible
materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous.
Follow all MSDS precautions in handling empty containers. Do not cut
or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining
emissions at the point of use below recommended exposure limits. If
used in enclosed area, use exhaust fans. Exhaust fans should be
explosion-proof or set up in a way that flammable concentrations of
solvent vapors are not exposed to electrical fixtures or hot
surfaces.
Respiratory: For operations where the exposure limit may be exceeded, a NIOSH
Protection: approved organic vapor respirator or supplied air respirator is
recommended. Equipment selection depends on contaminant type and
concentration, select in accordance with 29 CFR 1910.134 and good
industrial hygiene practice. For firefighting, use self-contained
breathing apparatus.
Skin: Rubber gloves are suitable for normal use of the product. For long
Protection: exposures chemical resistant gloves may be required such as
4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye: Safety glasses with side shields or safety goggles.

Protection:
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 70 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 100%
Solubility In Water: 28 parts
pH: Not applicable
Specific Gravity: 0.84 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Clear Liquid
Odor: Sharp, penetrating odor
Will Dissolve In: Methyl ethyl ketone
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide, carbon dioxide and hydrogen
Products: chloride.
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and
sodium hypochlorite) and hydrogen peroxides. May attack
plastic, resins and rubber.
Hazardous Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory
irritation, coughing, headache, dizziness, dullness, nausea,
shortness of breath and vomiting. High concentrations may cause
central nervous system depression, narcosis and unconsciousness.
May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl
ethyl ketone and cyclohexanone may be absorbed through the skin
causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation
with redness, stinging and tearing of the eyes. May cause eye
damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and
diarrhea. Aspiration during swallowing or vomiting can cause
chemical pneumonia and lung damage. May cause kidney and liver
damage.
Chronic Prolonged or repeated overexposure cause dermatitis and damage
Toxicity: to the kidney, liver, lungs and central nervous system.
Toxicity Data: Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours
Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m³/8 hours

SECTION 11 (Continued)

Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m³/8 hours
Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Tetrahydrofuran and acetone have been found to cause adverse developmental effects only when exposure levels cause other toxic Effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: 600 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U057, U159, U213
EPA Hazardous Waste ID Number: D001, D035, F003, F005
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)
Proper Shipping Name: Consumer Commodity Flammable Liquid NOS
Hazard Class/Packing Group: ORM-D 3, PGII
UN/NA Number: None UN1993
Hazard Labels: None Flammable Liquid (Methyl Ethyl Ketone, Cyclohexanone)

IMDG
Proper Shipping Name: Flammable Liquid, N.O.S. Limited Quantity
Hazard Class/Packing Group: 3, II
UN Number: UN1993
Label: None (Limited Quantities are excepted from labeling)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>% by wt.</u>
Methyl Ethyl Ketone	78-93-3	25-80%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (80% maximum) of 5,000 lbs, is 6,250 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:
NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None
HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

1. Identification

Product identifier **Oatey Purple Primer- NSF Listed for PVC and CPVC**

Other means of identification

Product code 1402E

Synonyms Part Numbers: 30755(TV), 30756(TV), 30757(TV), 30758, 30759, 30927

Recommended use Joining PVC Pipes

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Flammable liquids Category 2

Health hazards Acute toxicity, oral Category 4

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A

Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Specific target organ toxicity, single exposure Category 3 narcotic effects

Aspiration hazard Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	25-40
Cyclohexanone	108-94-1	25-40
Furan, Tetrahydro-	109-99-9	15-30
Methyl ethyl ketone	78-93-3	15-30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3 50 ppm
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3 200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methyl ethyl ketone (CAS 78-93-3)	TWA	50 ppm
	STEL	300 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
Methyl ethyl ketone (CAS 78-93-3)	TWA	590 mg/m3
		200 ppm
	STEL	885 mg/m3
	TWA	300 ppm
		590 mg/m3
		200 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
		Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Translucent liquid.
Color	Purple
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	14.0 - 23.0 °F (-10.0 - -5.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.84 +/- 0.02 @20°C
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	7 lb/gal
VOC (Weight %)	505 g/l SQACMD Method 24

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

Ingestion May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Furan, Tetrahydro- (CAS 109-99-9)	0.46
Methyl ethyl ketone (CAS 78-93-3)	0.29

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Methyl ethyl ketone RQ = 26274 LBS, Acetone RQ = 13130 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB2, T7, TP1, TP8, TP28
Packaging exceptions 150
Packaging non bulk 202
Packaging bulk 242

IATA

UN number UN1993
UN proper shipping name Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group II
Environmental hazards No.
ERG Code 3H
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1993
UN proper shipping name FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-E, S-E
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	27-May-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0

NFPA ratings**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**PRODUCT NAME:** CANTEX R10 PUR Low VOC Primer for PVC and CPVC Plastic Pipe**PRODUCT USE:** Low VOC Primer for PVC and CPVC Plastic Pipe**SUPPLIER:****MANUFACTURER:** IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300**EMERGENCY:** Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)**SECTION 2 - HAZARDS IDENTIFICATION****GHS CLASSIFICATION:**

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:**Signal Word:**
Danger**WHMIS CLASSIFICATION:** CLASS B, DIVISION 2
CLASS D, DIVISION 2B**Hazard Statements**

H225: Highly flammable liquid and vapor
 H319: Causes serious eye irritation
 H332: Harmful if inhaled
 H335: May cause respiratory irritation
 H336: May cause drowsiness or dizziness
 H351: Suspected of causing cancer
 EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
 P261: Avoid breathing dust/fume/gas/mist/vapors/spray
 P280: Wear protective gloves/protective clothing/eye protection/face protection
 P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P403+P233: Store in a well ventilated place. Keep container tightly closed
 P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH	CONCENTRATION
			Pre-registration Number	% by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	15 - 25
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	15 - 25
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 30
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	25 - 40

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog. HMIS NFP 0-Minimal

Unsuitable Extinguishing Media: Water spray or stream. Health 2 2 1-Slight

Exposure Hazards: Inhalation and dermal contact Flammability 3 3 2-Moderate

Combustion Products: Oxides of carbon and smoke Reactivity 0 0 3-Serious
PPE B 4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.**Methods for Cleaning up:** Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.**Materials not to be used for clean up:** Aluminum or plastic containers**SECTION 7 - HANDLING AND STORAGE**

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.

Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA	CAL/OSHA	CAL/OSHA	
						PEL-Ceiling	Ceiling	STEL	
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.**Monitoring:** Maintain breathing zone airborne concentrations below exposure limits.**Personal Protective Equipment (PPE):****Eye Protection:** Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.**Skin Protection:** Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.**Respiratory Protection:** Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear or purple, thin liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ethereal	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity:	0.842 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Water-thin
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects:

Category 2 Carcinogen

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l.
Degradability:	Not available
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1993
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
UN NUMBER/PACKING GROUP:	UN 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system.	R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness	
Safety Phrases:	S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes.	S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advise immediately and show this container or label.	

SECTION 16 - OTHER INFORMATION

Specification Information:	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).	
Department issuing data sheet:	Safety Health & Environmental Affairs	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	1/2/2015 / Updated GHS Standard Format	
Intended Use of Product:	Primer for PVC and CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

PRODUCT: Polyvinyl Chloride Conduit/Fittings/Accessories

DATE PREPARED: 5/04

MANUFACTURER:

CANTEX, INC.
2101 Southeast 1st Street
Post Office Box 340
Mineral Wells, Texas 76068

HAZARDOUS INGREDIENTS INFORMATION

HAZARDOUS COMPONENTS	OSHA PEL	ACGIH TLV	%
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PVC materials in conduit or molded form are inert and should not constitute any hazard in normal use or handling.

*THIS PRODUCT DOES DOES NOT CONTAIN TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND OF 40CFR372.

HMIS
HEALTH

REACTIVITY

FLAMMABILITY

PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT:	N.A.	SPECIFIC GRAVITY (H2O=1):	1.42 gms/cc
VAPOR PRESSURE (MM=Hg):	N.A.	MELTING POINT:	N.A.
VAPOR DENSITY (AIR=1):	N.A.	EVAPORATION RATE:	N.A. (butyl acetate=1)

SOLUBILITY IN WATER: Insoluble

APPEARANCE AND ODOR: N.A.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (method used)	FLAMMABLE LIMITS
Ignition Temp. Above 734° F	N.A.

EXTINGUISHING MEDIA: Water, foam and dry chemicals

SPECIAL FIRE FIGHTING PROCEDURES: PVC gives off thick smoke and toxic gasses such as carbon monoxide when burning. Firefighters must wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustion products are hazardous and toxic in nature. Thick smoke may obscure vision. PVC pipe and conduit will not burn unless supported by other combustible material.

REACTIVITY DATA

STABILITY: STABLE

INCOMPATIBILITY: N.A.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, HYDROGEN CHLORIDE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: Under most circumstances, exposure to PVC pipe materials poses no significant risk to health. During fire, toxic fumes, such as carbon monoxide and other gases are given off which are injurious to all sensitive skin areas and the breathing function. Skin irritation and coughing may result.

INHALATION: N.A.

SKIN CONTACT: N.A.

EYE CONTACT: N.A.

INGESTION: N.A.

CHRONIC: N.A.

EMERGENCY FIRST AID PROCEDURES:

EYES: N.A.

SKIN: N.A.

INGESTION: N.A.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: N.A.

SUSPECTED CANCER AGENT: IARC: NO NTP: NO OSHA: NO

SPILL OR LEAK PROCEDURES

IF MATERIAL IS SPILLED: Not applicable to PVC in pipe form. In pelletized, machined shavings or off-cut form, sweep up and place in suitable container for disposal.

WASTE DISPOSAL METHOD: LANDFILL PVC is an inert plastic material. No special disposal procedures are necessary other than complying with local, state and federal regulations.

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Non-toxic nuisance dust mask may be advised in presence of heavy saw dusting.

VENTILATION: Mechanical (General) in areas of thermal processing.

HAND PROTECTION: Gloves in areas involving molten PVC

EYE PROTECTION: In areas involving molten PVC

OTHER PROTECTION: None required

SPECIAL PRECAUTIONS

California Proposition 65 Statement:

No chemicals used to manufacture our products are reportable under this law.

THE DATA CONTAINED HEREIN ARE BASED ON INFORMATION THAT CANTEX BELIEVES TO BE RELIABLE, BUT NO EXPRESSED OR IMPLIED WARRANTY IS MADE WITH REGARD TO THE ACCURACY OF SUCH DATA OR ITS SUITABILITY FOR A GIVEN SITUATION.



Revision date: Initial version
Date of issue: 05.20.2015

Page: 1/10

Trade name:	Resurfacers
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SECTION 1: Identification

Product identifier: Resurfacers.
Synonyms: None available.
Product Code Number: All "80" Series.
SDS number: ID013
Recommended use: Contact resurfacer.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Skin sensitization, Category 1.

Environmental hazards

Not classified as an environmental hazard under GHS criteria.

GHS Signal word: WARNING.

GHS Hazard statement(s): H317 May cause an allergic skin reaction.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P261 - Avoid breathing dust/fume/gas/mist/ vapors/spray.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear protective gloves.
- Response:** P302+P352 - If on skin: Wash with plenty of water.
P321 - Specific treatment (see supplemental first aid instructions as required on this label).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
- Storage:** No storage precautionary statements required.
- Disposal:** P501 - Dispose of contents/containers to an approved disposal site in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:
Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Rosin	8050-09-7	< 5%

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: In case of contact, wash with soap and water. Consult a physician.

Eye contact: In case of contact, flush with water for 15 minutes. Consult physician.

Ingestion: If ingested, consult physician or local poison control center immediately.

Most important symptoms/effects, acute and delayed: May cause an allergic skin reaction.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: None normally required. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: None expected.
Combustion products – None known.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Stop spill at source. Sweep up and contain dust - - No special precautions. Dispose of as solid fill.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Wash hands with soap and water before eating. Keep away from children, infants and pets. Keep in cool, dry location. Keep

container(s) tightly closed and properly labeled. Store only in approved containers. Protect container(s) against physical damage.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEEL (15 min)
Rosin	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEEL (15 min)
Rosin	No data available	No data available

NIOSH Exposure Limits		
Substance	TWA	STEEL
Rosin	No data available	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep dust below exposure limits.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant safety glasses or goggles are recommended.

Skin and Hand protection: None normally required. For sensitive individuals, protect skin from contact. Use cotton gloves if required.

Respiratory protection: Use NIOSH / OSHA respirator to remove dust.

Other: None required.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Solid
Form:	Brown solid.
Color:	Brown.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	7.0 – 7.5
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	None
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	2.15
Solubility(ies):	None.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Other information:	
Percent solids by weight:	~ 100%

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	None.
Incompatible materials:	None known.
Hazardous decomposition Products:	None known.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: Skin contact is a primary route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:

May cause skin sensitization.

Delayed and immediate effects and chronic effects from short or long-term exposure:

None expected.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Rosin	LD ₅₀ Oral (Rat)	2800 mg/kg
	LD ₅₀ Dermal (Rat)	> 2000 mg/kg
	LD ₅₀ Inhalation	No data available

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: No information available on the mixture, however none of the components have been classified to cause skin corrosion/irritation (or are below the concentration threshold for classification).

Serious eye damage/eye irritation: No information available on the mixture, however none of the components have been classified to cause eye damage/irritation (or are below the concentration threshold for classification).

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization: No information available on the mixture, however Rosin has been classified as a skin sensitizer.

Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).
Further information:	No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Rosin	LC ₅₀	Fish - Brachydanio rerio (zebrafish)	60.3 mg/l (96 h)
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties.

It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required or are exempt from the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): None.

Massachusetts Right to Know: None of the components are listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: None of the components are listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Rosin (as Colophony) is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Rosin (as Colophony) is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2B – Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: May 20, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name: **SONOLASTIC NP1**
Other name: None allocated
Product code: Various
Recommended Use: One-component, Polyurethane-based moisture curing gun grade sealant.

Company: BASF Construction Chemicals Australia Pty Ltd.
ABN: 46 000 450 288
Address: 11 Stanton Road,
Seven Hills, NSW, 2147, Australia
Telephone number: +61 2 8811 4200
Facsimile: +61 2 8811 3299

Company: BASF Construction Chemicals New Zealand Ltd.
Address: 45 William Pickering Drive,
Albany, Auckland,
New Zealand
Telephone number: +64 9 414 7233
Facsimile: +64 9 414 7244

Emergency telephone number: 0417 658 263

2. HAZARDS IDENTIFICATION

Hazard classification: Hazardous according to criteria of NOHSC
Risk phrase(s): R 36/37/38 - Irritating to eyes, respiratory system and skin.
Safety phrase(s): S 7/9 - Keep container tightly closed and in a well ventilated place.
S 36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S 51 - Use only in well ventilated areas.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS

Chemical Name	CAS Number	Proportion
Mineral spirits	8052-41-3	< 10%
Calcium oxide	1305-78-8	< 10%
Non-hazardous ingredients		to 100%

4. FIRST AID MEASURES

Ingestion: Do NOT induce vomiting. Wash mouth with water and seek medical attention.
Eyes: While holding eyes open, gently flood with plenty of fresh water for 15 minutes. If irritation persists or recurs seek medical attention. Skilled personnel should only undertake removal of contact lenses after an eye injury.

MATERIAL SAFETY DATA SHEET

Skin: Remove contaminated clothing. Flush contacted area thoroughly with soap and plenty of water. If irritation persists, seek medical attention. If irritation persists seek medical attention.

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen and seek medical attention immediately.

First aid facilities: Ensure availability of clean water for eye/skin wash.

Advice to doctor: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Foam, CO₂ and Dry Chemical.

Hazards from combustion products: Acrid fumes and oxides of carbon.

Precautions and equipment for fire fighters: Containers can build up pressure if exposed to heat (fire). Full protective clothing with self-contained breathing apparatus as per personal protection, section 8.

6. ACCIDENTAL RELEASE MEASURES

Methods for clean up / collecting: Small or major spills should be adsorbed with dry, inert filler (soil or sand) which then can be shovelled into appropriately labelled drums for disposal. Ventilate the area and remove all sources of ignition.

Environmental precautions: Do not discharge into sewers.

7. HANDLING AND STORAGE

Conditions for safe storage

Location: Store in a cool, dry and well-ventilated area.

Temperature conditions: 5 to 35°C. Avoid long-term exposure to elevated temperatures.

Protection from weather: Store undercover and away from moisture, heat and direct sunlight.

Storage incompatibilities: Avoid contact with oxidising material and water vapour.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards: Not available

Engineering controls: Ventilation is recommended under normal use conditions. State regulations on speed and direction of airflow away from operators must be observed. Keep containers closed when not in use. Keep out of reach of children.

Respiratory protection: Type A1 if ventilation is inadequate.

Glove type (AS2161): Long PVC or nitrile rubber gauntlets

Eye protection: Chemical worker's goggles.

Clothing: Overalls.

Other: Use barrier creams to protect skin from contact with the material. Always wash hands before smoking, eating, drinking or using the toilet and after finishing work. Observe the usual precautions when handling chemicals.

9. PHYSICAL AND CHEMICAL PROPERTIES

MATERIAL SAFETY DATA SHEET

Appearance:	Pigmented paste with mild odour
Boiling point (°C):	155 - 251
Melting point (°C):	Not applicable
Vapour pressure @ 25°(kPa):	Not applicable
Specific gravity:	ca. 1.2
Flash point (°C):	> 49
Flammability limits (%):	UEL – 9.5 LEL – 0.9
Solubility in water:	Insoluble
Evaporation rate:	Slower than butyl acetate

10. STABILITY AND REACTIVITY

Hazard of use/storage:	Stable under normal storage and application temperature.
Materials to avoid:	Avoid contact with oxidising material and water vapour.
Hazardous decomposition products:	Acrid fumes and oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Acute

Ingestion:	Irritating to mouth, throat and stomach.
Eye:	Causes eye irritation.
Skin:	Causes skin irritation. Allergic reactions are possible. Repeated or prolonged contact with skin may cause sensitisation.
Inhalation:	Harmful if inhaled.

<u>Chronic:</u>	Susceptible individuals may develop allergic reactions such as dermatitis on a single significant skin or respiratory exposure or may become sensitised to the material on repeated and prolonged contact. Hence it is imperative that all forms of exposure be kept to an absolute minimum. This product contains solvents. Be warned that intentional misuse by deliberately inhaling contents may be harmful and fatal.
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12. ECOLOGICAL INFORMATION

Ecology:	Do not discharge into sewers.
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13. DISPOSAL CONSIDERATIONS

Disposal Methods

State/Territory authority:	Observe all Federal, State and Local regulations
Dispose – Secure landfill:	Yes.
Dispose – High temp incinerator:	Yes
Precautions for clean up crew:	Full protective clothing as per personal protection, section 8.

14. TRANSPORT INFORMATION

UN number:	None allocated
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MATERIAL SAFETY DATA SHEET

Dangerous goods class:	None allocated
Subsidiary risk:	None allocated
EPG card:	None allocated
Shipping name:	None allocated
Packing group:	None allocated
Poisons schedule:	None allocated
Hazchem code:	None allocated

15. REGULATORY INFORMATION

Risk phrase(s):	R 36/37/38 - Irritating to eyes, respiratory system and skin.
Safety phrase(s):	S 7/9 - Keep container tightly closed and in a well ventilated place.
	S 36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
	S 51 - Use only in well ventilated areas.

16. OTHER INFORMATION

Reason for Issue: Change of company name.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request. All information contained in this MSDS is as accurate and up-to-date as possible. No warranty expressed or implied is made as to its accuracy, reliability or completeness.

SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

SCS1001 12C-Crtrg (0.730 Lbs-0.331 Kg)

Section 1. Product and company identification

Product name : SCS1001 12C-Crtrg (0.730 Lbs-0.331 Kg)
Chemical name : Not available

**Manufacturer/Importer/
Distributor Information** : Momentive Amer Seal.
260 Hudson River Road
Waterford NY 12188

Contact person : 4information@momentive.com

Telephone : General information
+1-800-295-2392

**Emergency telephone number
Supplier** : CHEMTREC
1-800-424-9300

Section 2. Hazards identification

**Classification of the substance or
mixture** : SKIN CORROSION/IRRITATION - Category 2
TOXIC TO REPRODUCTION - Category 2

GHS label elements

Hazard pictograms : 

Signal word : Warning
Hazard statements : H315 Causes skin irritation.
H361f Suspected of damaging fertility.

Precautionary statements

General : Not applicable.

Prevention : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Wear protective gloves.
Wash hands thoroughly after handling.

Response : IF exposed or concerned:
Get medical attention.
IF ON SKIN:
Wash with plenty of soap and water.

Take off contaminated clothing.
 Wash contaminated clothing before reuse.
 If skin irritation occurs:
 Get medical attention.

- Storage** : Store locked up.
- Disposal** : P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Other hazards which do not result in classification** : Uncured product is irritating to eyes, skin, and respiratory system. Generates acetic acid during cure.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
Chemical name : Not available

Hazardous ingredients	% by weight	CAS number
Silanetriol, 1-methyl-, 1,1,1-triacetate	1 - 5	4253-34-3
Octamethylcyclotetrasiloxane	1 - 5	556-67-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first aid personnel** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures
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Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- Unsuitable extinguishing media** : water jet
- Specific hazards arising from the chemical** : No specific fire or explosion hazard.
- Hazardous thermal decomposition products** : Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a

- licensed waste disposal contractor. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see section 8 of SDS). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Octamethylcyclotetrasiloxane	() Recommended exposure limit (REL): 5 ppm

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties**Appearance**

- Physical state** : Paste
- Color** : colorless.
- Odor** : Acetic acid.
- Odor threshold** : Not available
- pH** : Not available
- Melting point** : Not available
- Boiling point** : Not available
- Flash point** : 93 °C (199.40 °F) (Estimated.)
- Burning time** : Not available
- Burning rate** : Not available
- Evaporation rate** : Not available
- Flammability (solid, gas)** : Not available
- Lower and upper explosive (flammable) limits** : **Lower:** Not applicable.
Upper: Not applicable.

Vapor pressure	:	Not available
Vapor density	:	Not available
Relative density	:	Not available
Density	:	1.06 g/cm ³
Solubility	:	Soluble in toluene
Solubility in water	:	Insoluble
Partition coefficient: n-octanol/water	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
SADT	:	Not available
Viscosity	:	Dynamic: Not available Kinematic: Not available
Volatile organic content	:	1.5 % (w/w) 20 g/l

Other information

No additional information.

Section 10. Stability and reactivity

Reactivity	:	Stable under normal conditions.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	No specific data.
Incompatible materials	:	No specific data.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information
--

Information on toxicological effects**Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
Octamethylcyclotetrasiloxane				
	LD50 Oral	Rat	4,800 mg/kg OECD-Guideline 401 (Acute Oral Toxicity)	-
	LC50 Inhalation	Rat	> 12.1 mg/l	4 h
	LC50 Inhalation	Rat	36 mg/l OECD Test Guideline 403	4 h
	LD50 Dermal	Rat	> 2,400 mg/kg OECD Test Guideline 402	-

Conclusion/Summary : Not determined

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
SCS1001	Skin - Moderate irritant OECD-Guideline 404 (Acute Dermal Irritation/Corrosion)	Rabbit			-
Remarks:	Classification according to test study data of a similar product.				
	eyes - Mild irritant OECD-Guideline 405 (Acute Eye Irritation/Corrosion)	Rabbit			-
Remarks:	Classification according to test study data of a similar product.				
Octamethylcyclotetrasiloxane	Skin OECD-Guideline 404 (Acute Dermal Irritation/Corrosion)	Rat			-
Remarks:	Non-irritating to the skin.				
	eyes OECD-Guideline 405 (Acute Eye Irritation/Corrosion)	Rabbit			-
Remarks:	Non-irritating to the eyes.				

Conclusion/Summary

Skin : Moderate irritant
eyes : Mild irritant
Respiratory : Not determined

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Octamethylcyclotetrasiloxane	-	Guinea pig	Not sensitizing OECD-Guideline 406 (Skin Sensitisation)

Conclusion/Summary

Skin : Not determined
Respiratory : Not determined

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Octamethylcyclotetrasiloxane	OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)	In vitro	Negative
	Mouse Lymphoma Assay (OECD Guideline 476)	In vitro	Negative
	OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)	In vivo	Negative

Conclusion/Summary : Not determined

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Octamethylcyclotetrasiloxane	Inhalation - OECD 453	Rat - Female	150 mg/kg	24 months
Remarks:	NOAEC			
	Inhalation - OECD 453	Rat - Male	> 700 mg/kg	24 months
Remarks:	NOAEC			

Conclusion/Summary : Not determined

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Octamethylcyclotetrasiloxane	-	-	-	Rat	Inhalation: 300 mg/kg OECD 416	-
Remarks:	NOAEL parents					
	-	-	-	Rat	Inhalation: 300 mg/kg OECD 416	-
Remarks:	NOAEL F1					

Conclusion/Summary : Not determined

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Octamethylcyclotetrasiloxane	- Inhalation OECD Test Guideline 414	Rabbit	500 mg/kg	18 days
Remarks:	NOAEL			
	- Inhalation OECD Test Guideline 414	Rabbit	300 mg/kg	18 days
Remarks:	NOAEL maternity			

Conclusion/Summary : Not determined

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Silanetriol, 1-methyl-, 1,1,1-triacetate	Category 3		Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available

Aspiration hazard

Not available

Information on the likely routes of exposure : Not available

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
Inhalation : Adverse symptoms may include the following:
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
Skin contact : Adverse symptoms may include the following:
 irritation
 redness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
Ingestion : Adverse symptoms may include the following:
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Long term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Octamethylcyclotetrasiloxane	NOAEC Inhalation	Rat	150 mg/kg OECD 453	24 months
Remarks:	NOAEC			
	NOAEL Dermal	Rabbit	> 1 mg/kg OECD 410	3 weeks
Remarks:	NOAEL			

Conclusion/Summary : Not determined

General	:	No known significant effects or critical hazards.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	11,982.6 mg/kg

Other information

Octamethylcyclotetrasiloxane (D4) Ingestion: Rodents given large doses via oral gavage of Octamethylcyclotetrasiloxane (1600mg/kg/day,14 days), developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size). Inhalation: In inhalation studies, laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days/week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. This response in rats, which does not affect the animal's health, is well-documented and widely recognized. It is related to an increase of liver enzymes that metabolize and eliminate a material from the body. The increased liver weight reverses even while the D4 exposure continues. The finding is not adverse, but is considered a natural adaptive change in rats, and does not represent a hazard to humans. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents. Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation), with D4. Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found. A two-year, combined chronic/carcinogenicity study, during which rats were exposed to D4 by inhalation, data showed a statistically significant increase in a benign uterine tumor in female rats exposed at the highest level--a level much higher than the low levels that consumers or workers may encounter. An expert panel of independent scientists who have reviewed the results of this research concur that the finding seen in the two-year study occurred through a biological pathway that is specific to the rat and is not relevant to humans. Therefore, this observed effect does not indicate a potential health hazard to humans. In developmental toxicity studies, rats and rabbits were exposed to D4 at concentrations up to 700 ppm and 500 ppm, respectively. No teratogenic effects (birth defects) were observed in either study.

Section 12. Ecological information

Ecotoxicity

Conclusion/Summary : Not available

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
octamethylcyclotetrasiloxane	310 Ready Biodegradability - CO ₂ in Sealed Vessels	3.7 % - 29 d		Activated sludge

	(Headspace Test)			
Remarks:	Not readily biodegradable.			

Conclusion/Summary : Not available

Bioaccumulative potential

Product/ingredient name	Species	Exposure	LogPow	BCF	Potential
Octamethylcyclotetrasiloxane	Fathead minnow	28 d		12.40	low

Mobility in soil

Soil/water partition coefficient (KOC) : Not available

Other adverse effects : No known significant effects or critical hazards.

Other information

Octamethylcyclotetrasiloxane (D4) meets the current REACH Annex XIII criteria for PBT and vPvB. However, D4 does not behave similarly to known PBT/vPvB substances. The silicones industries interpretation of the available data is that the weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

15.Regulatory information

United States

U.S. Federal regulations : **United States - TSCA 12(b) - Chemical export notification:** None required.
United States - TSCA 5(a)2 - Final significant new use rules: Not listed
United States - TSCA 5(a)2 - Proposed significant new use rules: Not listed
United States - TSCA 5(e) - Substances consent order: Not listed

SARA 311/312

Classification : Immediate (acute) health hazard
 Delayed (chronic) health hazard

California Prop. 65: : None required.

Canada

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic).
 Class D-2B: Material causing other toxic effects (Toxic).

International regulations

International lists : **Australia inventory (AICS):** All components are listed or exempted.
Canada inventory: At least one component is not listed in DSL but all such components are listed in NDSL.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory (NZIoC): Not determined.
Philippines inventory (PICCS): All components are listed or exempted.
United States inventory (TSCA 8b): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Taiwan inventory (CSNN): All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System III (U.S.A.) :

Health	1
Flammability	1
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

Full text of abbreviated H statements : Not applicable.

History

Date of printing : 05/19/2015

Date of issue/Date of revision	:	04/10/2015
Date of previous issue	:	04/03/2015
Version	:	1.5
Prepared by	:	Product Safety Stewardship
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations
References	:	Not available

Notice to reader

Unless otherwise specified in section 1, Momentive Products are intended for industrial application only. They are not intended for specific medical applications, neither for long-lasting (> 30 days) implantation into the human body, injected or directly ingested, nor for the manufacture of multiple usable contraceptives. Keep out of the reach of children.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SCS1003
Silicone Sealant**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Manufacturer Name: Momentive Performance Materials LLC
260 Hudson River Road
Waterford NY 12188

Revised: 01/23/2013
Prepared by Product Safety Team
CHEMTREC 1-800-424-9300
MSDS Contact 1-888-443-9466
Information 4information@momentive.com

Chemical Family/Use: Sealant

Formula: Mixture

HMIS

Health: 0 Flammability: 1 Reactivity: 0

NFPA

Health: 1 Flammability: 1 Reactivity: 0

2. HAZARDS IDENTIFICATION**WHMIS CLASSIFICATION**

Very Toxic Material Causing Other Toxic Effects
Toxic Material Causing Other Toxic Effects

EMERGENCY OVERVIEW

WARNING! Irritating to eyes, respiratory system and skin. May be harmful if swallowed. Adverse liver and reproductive effects reported in animals.

Form: Solid

Color: Black

Odor: Acetic acid.

Potential Health Effects**INGESTION**

May be harmful if swallowed.

SKIN

Uncured product contact will irritate lips, gums and tongue. Skin irritation is possible after contact with the uncured product.

**SCS1003
Silicone Sealant**

INHALATION

Applies in uncured state.

EYES

Eye irritation is possible after contact with the uncured product.

MEDICAL CONDITIONS AGGRAVATED

None known.

SUBCHRONIC (TARGET ORGAN)

Liver; Reproductive hazard.

CHRONIC EFFECTS / CARCINOGENICITY

This product or one of its ingredients present at 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.

ROUTES OF EXPOSURE

Dermal

3. COMPOSITION/INFORMATION ON INGREDIENTS**HAZARDOUS COMPONENT(S)**

PRODUCT COMPOSITION	CAS-NO.	WGT. %
Methyltriacetoxysilane	4253-34-3	1 - 5 %
Octamethylcyclotetrasiloxane	556-67-2	1 - 5 %

4. FIRST AID MEASURES**INGESTION**

If swallowed, do NOT induce vomiting. Give a glass of water.

SKIN

To clean from skin, remove completely with a dry cloth or paper towel, before washing with detergent and water. If skin irritation occurs: Get medical advice/attention.

**SCS1003
Silicone Sealant****INHALATION**

If inhaled, remove to fresh air. If not breathing give artificial respiration using a barrier device. If breathing is difficult give oxygen. Get medical attention.

EYES

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

5. FIRE-FIGHTING MEASURES

FLASH POINT:	> 93 °C; 199 °F
METHOD	Estimated
Autoignition Temperature:	None
FLAMMABLE LIMITS LEL:	Not applicable
FLAMMABLE LIMITS UEL:	Not applicable

SENSITIVITY TO MECHANICAL IMPACT: No

SENSITIVITY TO STATIC DISCHARGE

Sensitivity to static discharge is not expected.

EXTINGUISHING MEDIA

All standard extinguishing agents are suitable.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES**ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED**

Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.

7. HANDLING AND STORAGE**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

Avoid contact with eyes, skin, and clothing. Use only in well-ventilated areas. Avoid accidental ingestion of this material. Wash hands and face before eating, drinking, smoking, using toilet facilities, or applying

**SCS1003
Silicone Sealant**

cosmetics.

Remove contact lenses before using sealant. Do not handle lenses until all sealant has been cleaned from the finger and hands. Keep container closed.

STORAGE

Keep out of the reach of children. Keep container tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**ENGINEERING CONTROLS**

Eye wash facilities and emergency shower must be available when handling this product.

RESPIRATORY PROTECTION

If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

PROTECTIVE GLOVES

None

EYE AND FACE PROTECTION

None

OTHER PROTECTIVE EQUIPMENT

Wear suitable protective clothing and eye/face protection.

Exposure Guidelines

Component	CAS-No.	Source	Value
Octamethylcyclotetrasiloxane	556-67-2	Z_INTL_OEL, REL	5 ppm

Consult local authorities for acceptable provincial values.

Absence of values indicates none found

PEL - OSHA Permissible Exposure Limit; TLV - ACGIH Threshold Limit Value; TWA - Time Weighted Average

OSHA revoked the Final Rule Limits of January 19, 1989 in response to the 11th Circuit Court of Appeals decision (AFL-CIO v. OSHA) effective June 30, 1993. See 29 CFR 1910.1000 (58 FR 35338).

**SCS1003
Silicone Sealant****9. PHYSICAL AND CHEMICAL PROPERTIES**

BOILING POINT (°C):	<u>No data available.</u>
VAPOR PRESSURE (20 C) (MM HG):	<u>No data available.</u>
VAPOR DENSITY (AIR=1):	<u>No data available.</u>
FREEZING POINT:	<u>No data available.</u>
PHYSICAL STATE:	Solid
ODOR:	Acetic acid.
ODOR THRESHOLD:	No data available.
COLOR:	Black
EVAPORATION RATE (BUTYL ACETATE=1):	<u>No data available.</u>
SPECIFIC GRAVITY:	ca. 1.06
DENSITY:	ca. 1.060 g/cm ³
pH:	Not determined.
VOLATILE ORGANIC CONTENT:	1.5 %(m)
SOLUBILITY IN WATER (20 C):	Insoluble
SOLUBILITY IN ORGANIC SOLVENT (STATE SOLVENT):	Soluble in toluene
Partition Coefficient: n-octanol/water:	No data available.

10. STABILITY AND REACTIVITY**Stability**

Stable

HAZARDOUS POLYMERIZATION.

Hazardous polymerisation does not occur.

HAZARDOUS THERMAL DECOMPOSITION / COMBUSTION PRODUCTS

Carbon dioxide; Silicon dioxide.; Formaldehyde.; This product contains methylpolysiloxanes which can generate formaldehyde at approximately 300 degrees Fahrenheit (150'C) and above, in atmospheres which contain oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and potential cancer hazard. A MSDS for formaldehyde is available from Momentive.

INCOMPATIBLE MATERIALSNone**CONDITIONS TO AVOID**

None known.

**SCS1003
Silicone Sealant****11. TOXICOLOGICAL INFORMATION****ACUTE ORAL**

Remarks: No data available.

Repeated dose toxicity

None

ACUTE DERMAL

Remarks: No data available.

ACUTE INHALATION

Remarks: None known.

OTHER

Octamethylcyclotetrasiloxane

Ingestion: Rodents given large doses via oral gavages of Octamethylcyclotetrasiloxane (1600 mg/kg day, 14 days) developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size).

Inhalation: In inhalation studies, laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents.

Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation) with Octamethylcyclotetrasiloxane (D4). Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found.

Interim results from a two generation reproductive study in rats exposed to 500 and 700 ppm D4 (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation) resulted in a statistically significant decrease in live mean litter size as well as extended periods of off-spring delivery (dystocia). These results were not observed at the 70 and 300ppm dosing levels.

Preliminary results from an ongoing 24-month combined chronic/oncogenicity study in rats exposed to 10, 30, 150, or 700 ppm D4 showed test-article related effects in the kidney (male and female) and uterus of rats exposed for 12 to 24 months. These effects include increased kidney weight and severity of chronic nephropathy, increased uterine weight, increased incidence of endometrial cell hyperplasia, and an increased incidence of endometrial adenomas. All of these effects are limited to the 700 ppm exposure group.

These results have been shown to be rat-specific. Further studies are ongoing.

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Silicone Sealant**

In developmental toxicity studies, rats and rabbits were exposed to Octamethylcyclotetrasiloxane at concentrations up to 700 ppm and 500 ppm respectively. No teratogenic effects (birth defects) were observed in either study.

,Contains dibutyltin compound(s) - May impair fertility. May cause harm to unborn child.

GENETIC TOXICITY IN VITRO

None

GENETIC TOXICITY IN VIVO

None

SENSITIZATION

No data available.

SKIN IRRITATION.

No data available.

EYE IRRITATION

No data available.

MUTAGENICITY

No data available.

OTHER EFFECTS OF OVEREXPOSURE

Acetic acid released during curing.

12. ECOLOGICAL INFORMATION**ECOTOXICITY**

No data available.

DISTRIBUTION

No data available.

CHEMICAL FATE

No data available.

13. DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Disposal should be made in accordance with federal, state and local regulations.

**SCS1003
Silicone Sealant****14. TRANSPORT INFORMATION**

Further Information: This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

15. REGULATORY INFORMATION**Inventories**

Australia Inventory of Chemical Substances (AICS)	y (positive listing)	
EU list of existing chemical substances	y (positive listing)	
Japan Inventory of Existing & New Chemical Substances (ENCS)	y (positive listing)	
China Inventory of Existing Chemical Substances	y (positive listing)	
Korea Existing Chemicals Inventory (KECI)	y (positive listing)	
Canada DSL Inventory	q (quantity restricted)	
Canada NDSL Inventory	n (Negative listing)	
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	y (positive listing)	
TSCA list	y (positive listing)	On TSCA Inventory

For inventories that are marked as quantity restricted or special cases, please contact Momentive.

Canadian Regulatory Information**WHMIS CLASSIFICATION**

Very Toxic Material Causing Other Toxic Effects, Toxic Material Causing Other Toxic Effects

CPR Compliance

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION**OTHER**

These data are offered in good faith as typical values and not as product specifications. No warranty,

**SCS1003
Silicone Sealant**

either expressed or implied, is made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

,C = ceiling limit NEGL = negligible
EST = estimated NF = none found
NA = not applicable UNKN = unknown
NE = none established REC = recommended
ND = none determined V = recommended by vendor
SKN = skin TS = trade secret
R = recommended MST = mist
NT = not tested STEL = short term exposure limit
ppm = parts per million ppb = parts per billion
By-product= reaction by-product, TSCA inventory status not required under 40 CFR part 720.30(h-2).



Article Information Sheet

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This Article Information Sheet is provided as a courtesy in response to a customer request. A Safety Data Sheet (SDS) has not been prepared for these product(s) because they are articles. Articles are not subject to the Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200(b)(6)(v)). As defined in this standard: "Article" means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical or health risk to employees.

Document Group:	07-4974-7	Version Number:	2.00
Issue Date:	04/21/15	Supersedes Date:	09/25/14

SECTION 1: Identification

1.1. Product identifier

3M™ Glass Cloth Electrical Tape 27

Product Identification Numbers

44-0024-3109-4, 44-0024-8989-4, 80-0120-2035-2, 80-6105-6776-2, 80-6107-8192-6, 80-6109-7340-8, 80-6114-1982-3, 80-6114-1996-3, 80-6114-1997-1, 80-6114-2883-2, 80-6114-3454-1, 80-6114-3715-5, FE-5100-5111-6, FE-5100-5112-4, FE-5100-5124-9, FE-5100-5126-4, FE-5100-5265-0

1.2. Recommended use and restrictions on use

Recommended use

Electrical, Electrical Insulation

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Electrical Markets Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
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Glass Cloth	65997-17-3	50 - 75
Rubber Adhesive	Mixture	25 - 50

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

No need for first aid is anticipated.

Skin Contact:

Wash with soap and water. If you are concerned, get medical advice.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

SECTION 5: Fire-fighting measures

In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Wear appropriate gloves to minimize risk of injury to skin from mechanical irritation.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Roll of Tape

Odor, Color, Grade:	White
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Density	<i>No Data Available</i>
Specific Gravity	<i>No Data Available</i>
Solubility In Water	<i>Not Applicable</i>
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Average particle size	<i>No Data Available</i>
Bulk density	<i>No Data Available</i>
Hazardous Air Pollutants	<i>No Data Available</i>
Molecular weight	<i>No Data Available</i>
Volatile Organic Compounds	0 %
Percent volatile	0 %
Softening point	<i>No Data Available</i>
VOC Less H2O & Exempt Solvents	0 %

SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

SECTION 11: Toxicological information

Inhalation:

No health effects are expected

Skin Contact:

Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Eye Contact:

No health effects are expected

Ingestion:

No health effects are expected

Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	07-4974-7	Version Number:	2.00
Issue Date:	04/21/15	Supersedes Date:	09/25/14

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Material Safety Data Sheet

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This material safety data sheet (MSDS) is provided as a courtesy in response to a customer request. This product is not regulated under, and a MSDS is not required for this product by the OSHA Hazard Communication Standard (29 CFR 1910.1200) because, when used as recommended or under ordinary conditions, it should not present a health and safety hazard. However, use or processing of the product not in accordance with the product's recommendations or not under ordinary conditions may affect the performance of the product and may present potential health and safety hazards.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Scotch® Glass Cloth Tape 69 with Silicone Adhesive
MANUFACTURER: 3M
DIVISION: Electrical Markets Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 10/23/12
Supercedes Date: 10/23/12

Document Group: 31-3090-3

Product Use:

Intended Use: Electrical

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
Glass Cloth	65997-17-3	50 - 75
Silicone Adhesive	Mixture	25 - 50

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Roll of Tape

Odor, Color, Grade: White

General Physical Form: Solid

Immediate health, physical, and environmental hazards: This product, when used under reasonable conditions and in accordance with the 3M directions for use, should not present a health hazard. However, use or processing of the product in a manner not in

accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

No health effects are expected.

Skin Contact:

No health effects are expected.

Inhalation:

No health effects are expected.

Ingestion:

No health effects are expected.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: No need for first aid is anticipated.
Skin Contact: No need for first aid is anticipated.
Inhalation: No need for first aid is anticipated.
If Swallowed: No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	No Data Available
Flash Point	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
OSHA Flammability Classification:	Not Applicable

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

Clean-up methods

Not applicable.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2 STORAGE

Not applicable.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Not applicable.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Not applicable.

8.2.2 Skin Protection

Not applicable.

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing

Not applicable.

8.3 EXPOSURE GUIDELINES

None Established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Roll of Tape
Odor, Color, Grade:	White
General Physical Form:	Solid

Autoignition temperature	No Data Available
Flash Point	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Boiling Point	Not Applicable
Vapor Density	Not Applicable
Vapor Pressure	Not Applicable
Specific Gravity	No Data Available
pH	Not Applicable
Melting point	Not Applicable
Solubility In Water	Not Applicable
Evaporation rate	Not Applicable
Volatile Organic Compounds	0 %
Kow - Oct/Water partition coef	No Data Available
Percent volatile	0 %
VOC Less H2O & Exempt Solvents	0 %
Viscosity	Not Applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

None known

10.2 Materials to avoid

None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified

Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined. Not applicable.

CHEMICAL FATE INFORMATION

Not determined. Not applicable.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of waste product in a sanitary landfill.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

80-0020-4003-0, 80-0120-4005-3, 80-0180-0360-0, 80-1006-1119-5, 80-6108-6823-6, 80-6109-1900-5

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - No Delayed Hazard - No

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 0 Flammability: 1 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:

Section 1: Product name was modified.

Page Heading: Product name was modified.

Section 1: Initial issue message was modified.

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Document Group:	27-5430-7	Version Number:	1.00
Issue Date:	09/25/14	Supersedes Date:	Initial Issue

SECTION 1: Identification

1.1. Product identifier

3M™ Saturated Glass Cloth Tape 90

Product Identification Numbers

80-6107-5010-3, 80-6114-4788-1

1.2. Recommended use and restrictions on use

Recommended use

Electrical, Electrical Insulation

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Electrical Markets Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Class Cloth	Mixture	40 - 60
Rubber Adhesive	Mixture	40 - 60

OXIDE GLASS CHEMICALS	65997-17-3	40 - 60
Glass Cloth	None	2 - 51.2
BETA-PINENE, ALPHA-PINENE, DIPENTENE, BETA-PHELLANDRENE POLYMER	68240-09-5	10 - 20
P-TERT-BUTYLPHENOL-FORMALDEHYDE RESIN	25085-50-1	2 - 5
TITANIUM DIOXIDE	Trade Secret*	2 - 5
ACRYLIC COPOLYMER from Rohm & Hass	Trade Secret*	1.15 - 1.196

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

No need for first aid is anticipated.

Skin Contact:

Wash with soap and water. If you are concerned, get medical advice.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

SECTION 5: Fire-fighting measures

In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Wear appropriate gloves to minimize risk of injury to skin from mechanical irritation.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical

under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Roll of Tape
Odor, Color, Grade:	White
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	No flash point
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Density	<i>No Data Available</i>
Specific Gravity	<i>No Data Available</i>
Solubility in Water	Nil
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Average particle size	<i>No Data Available</i>
Bulk density	<i>No Data Available</i>
Hazardous Air Pollutants	<i>No Data Available</i>
Molecular weight	<i>No Data Available</i>
Volatile Organic Compounds	0 %
Percent volatile	0 %
Softening point	<i>No Data Available</i>
VOC Less H2O & Exempt Solvents	0 %

SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

SECTION 11: Toxicological information

Inhalation:

No health effects are expected

Skin Contact:

Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Eye Contact:

No health effects are expected

Ingestion:

No health effects are expected

Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	27-5430-7	Version Number:	1.00
Issue Date:	09/25/14	Supersedes Date:	Initial Issue

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Document Group:	07-7739-1	Version Number:	1.01
Issue Date:	12/23/14	Supersedes Date:	12/03/14

SECTION 1: Identification

1.1. Product identifier

Scotchfil(TM) Electrical Insulating Putty

Product Identification Numbers

80-6108-3372-7

1.2. Recommended use and restrictions on use

Recommended use

Electrical insulation, Insulating and Sealing electrical connections

1.3. Supplier’s details

MANUFACTURER:	3M
DIVISION:	Electrical Markets Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
BUTYL RUBBER	9010-85-9	40 - 60
AMORPHOUS SILICA	61790-53-2	25 - 35

MINERAL OIL	8042-47-5	10 - 15
TACKIFIER	26813-14-9	3 - 10
POLYETHYLENE	9002-88-4	4 - 10
POLYISOBUTYLENE	9003-27-4	4 - 10
CARBON BLACK	1333-86-4	1 - 5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

No need for first aid is anticipated.

Skin Contact:

No need for first aid is anticipated.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

SECTION 5: Fire-fighting measures

In case of fire: Use a carbon dioxide or dry chemical extinguisher to extinguish.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Roll of Tape
Odor, Color, Grade:	Release coated paper lined black, tacky rubber.
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>No Data Available</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Specific Gravity	Approximately 1.14 Units not avail. or not appl. [Ref Std: WATER=1] [Details: SPECIFIC METHOD: SUPPLIER METHOD]
Solubility in Water	Nil
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	Nil
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>

SECTION 10: Stability and reactivity

This material is considered to be non reactive under normal use conditions.

SECTION 11: Toxicological information

Inhalation:

No health effects are expected

Skin Contact:

No health effects are expected

Eye Contact:

No health effects are expected

Ingestion:

No health effects are expected

Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

SECTION 13: Disposal considerations

Dispose of contents/container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Material Safety Data Sheet - MSDS

Pipe Wrap (110, 210, 410, 220)

Section 1. Manufacturer Identification

Manufacturer's Name & Address:

L.H. Dottie
6131 S. Garfield Ave.
Commerce, CA 90040

Emergency Telephone Number:

1-800-255-3924

Date Revised: April 2010

Section 2. Composition Information on Ingredients

Chemical Name	Weight %	CAS No.
Rubber Adhesive	8-12	
PVC resin	54-58	[9002-86-2]
Plasticizers	23-29	[117-81-7]
Lead Stabilizer compound	20000 PPM	
Pigments (organic or /and inorganic)	0-5	
Filler	5-12	
Cd compound	PPM	
Toluene	0-1	[108-88-3]

Section 3. Physical and Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H ₂ O=1)	1.3-1.4
Vapor Pressure (mm Hg)	N/A	Softening Point	>80°C
Vapor Density (Air=1)	N/A	Evaporation Rates (Butyl Acetates=1)	N/A
Solubility in Water	N/A	Decomposition Temperature	260(°C)/500°F
Appearance and Odor			

Section 4. Fire and Explosion Hazard Data

Flash Point (Method Used): 320-390 (ASTM D-1929)	Flammable Limits: N/A
Extinguishing Media: water, dry chemical foam, CO ₂	
Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes	
Unusual Fire and Explosion Hazards:	

Section 5. Health Hazard Data

Route(s) of Entry: Inhalation
There are no instances of health hazard when handling unheated product. When heated at high temperature, it will thermally degrade and decompose and produce fumes.
Health Hazards (Acute and Chronic) Inhalation of such fumes may irritate nose, throat and lungs depending on concentration and duration of exposure.
OSHA Regulated N/A
Signs and Symptoms of Exposure Fumes overexposure may cause cough, headache and drowsiness.
Medical Conditions Generally Aggravated by Exposure 1. Remove the fuming material or remove to fresh air. 2. Call a physician.
Emergency and Fire Aid Procedures : If irritation persists from processing vapors or decomposition products, remove individual from the area.

Section 6. Handling and Use

Steps to Be Taken in Case Material is Released or Spilled : N/A
Waste Disposal Method : Use approved disposal methods as recommended by state and local agencies.
Precautions to Be Taken in Handling and Storing : stored in cool, dry, well-ventilated area, away from flammable materials or sources of heat and flame
Other Precautions : None

Section 7. Control Measures

Respiratory Protection (Specify Type) : Not Needed

Ventilation	Local Exhaust: not needed
	Mechanical (General): recommended

Protective Gloves:Not needed

Eye Protection: recommended for all workplaces

Other Protective Clothing or Equipment: Not needed



Revision date: Initial version
Date of issue: 04.24.2015

Page: 1/10

Trade name: Aqua-Gel® CW Wire Pulling Lubricant

SECTION 1: Identification

Product identifier: Aqua-Gel® CW Wire Pulling Lubricant.
Synonyms: None available.
Product Code Number: 31-298, 31-291, 31-295.
SDS number: ID003
Recommended use: Wire Pulling Lubricant.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Skin corrosion/irritation, Category 2.
Serious eye damage/eye irritation, Category 2.

Environmental hazards

Not classified as a physical hazard under GHS criteria.

GHS Signal word: WARNING.

GHS Hazard statement(s): Causes skin irritation.
Causes serious eye irritation.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P264 - Wash skin thoroughly after handling.
P280 - Wear protective gloves/eye protection/face protection.
- Response:** P302+P352 – If on skin: Wash with plenty of soap and water.
P305 + P351 + P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/ attention.
P362 - Take off contaminated clothing and wash before reuse.
- Storage:** No storage precautionary statements.
- Disposal:** No disposal precautionary statements.

Hazard(s) not otherwise Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:
Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Potassium Hydroxide (20% solution)	1310-58-3	< 2%

Note: The balance of the ingredients are not classified as hazardous or below the threshold concentration, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and thoroughly clean before reuse. Get medical attention if symptoms persist.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms persist.

Ingestion: If swallowed, administer water or milk. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: Causes skin irritation. Causes serious eye irritation.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens.

Combustion products - Carbon monoxide, Carbon dioxide. Oxides of Nitrogen.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate

protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source, wipe up, shovel or vacuum spilled material. Clean up spills immediately as they can be dangerously slippery. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Store at temperatures between -40 and 180°F. Keep away from children, infants and pets. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEEL (15 min)
Potassium Hydroxide	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEEL (15 min)
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

NIOSH Exposure Limits		
Substance	TWA	STEEL
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is suggested at points where vapors can be expected to escape to the workplace air or in enclosed areas.

Individual protection measures, such as personal protective equipment:

Eye/face protection: None normally required, but the use of OSHA compliant safety glasses or splash goggles recommended.

Skin and Hand protection: None normally needed -Neoprene if necessary. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None normally required.

Other: Eye wash / eye bath in the work area is recommended but not necessary.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Gel
Form:	Clear gel.
Color:	Red.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	6.5 – 8.0
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	100°C (212°F)
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	No data available
Flammability limit – upper (%):	No data available
Explosive limit – lower (%):	No data available
Explosive limit – upper (%):	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	1.09-1.11
Solubility(ies):	Infinite.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	10000-15000 cps

Other information:

% Volatile by volume: < 45%
Percent solids by weight: ~ 60%

SECTION 10: Stability and Reactivity

Reactivity: Not chemically reactive.
Chemical stability: Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: Avoid prolonged storage at temperatures exceeding 180°F.
Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens.
Incompatible materials: Avoid contact with strong oxidizers and nitrates.
Hazardous decomposition Products: Oxides of carbon and nitrogen.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: May produce skin irritation.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
Upon prolonged contact, may cause temporary eye discomfort.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Detailed below.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Potassium hydroxide	LD ₅₀ Oral (Rat)	273 mg/kg
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation (Rat)	No data available

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: This material may cause skin irritation.

Serious eye damage/eye irritation:	Upon prolonged contact, may cause temporary eye discomfort.
Respiratory sensitization:	No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).
Skin sensitization:	No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).

Further information: No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Potassium hydroxide	LC ₅₀	Fish - Gambusia affinis (Mosquito fish)	85 mg/l (24h)
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

Component	Reportable Quantity
Potassium Hydroxide	1000 lbs

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65.

Massachusetts Right to Know: Potassium hydroxide is listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: None of the components are listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Potassium hydroxide is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Potassium hydroxide is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2B - Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: April 24, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Revision date: Initial version
Date of issue: 04.24.2015

Page: 1/10

Trade name: Aqua Gel[®] IIP Pourable Wire Pulling Lubricant

SECTION 1: Identification

Product identifier: Aqua Gel[®] IIP Pourable Wire Pulling Lubricant.
Synonyms: None available.
Product Code Number: 31-421, 31-425, 31-435.
SDS number: ID002
Recommended use: Wire Pulling Lubricant.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Skin corrosion/irritation, Category 2.
Serious eye damage/eye irritation, Category 2.

Environmental hazards

Not classified as a physical hazard under GHS criteria.

GHS Signal word: WARNING.

GHS Hazard statement(s): Causes skin irritation.
Causes serious eye irritation.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P264 - Wash skin thoroughly after handling.
P280 - Wear protective gloves/eye protection/face protection.
- Response:** P302+P352 – If on skin: Wash with plenty of soap and water.
P305 + P351 + P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/ attention.
P362 - Take off contaminated clothing and wash before reuse.
- Storage:** No storage precautionary statements.
- Disposal:** No disposal precautionary statements.

Hazard(s) not otherwise Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:
Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Potassium Hydroxide (20% solution)	1310-58-3	< 2%

Note: The balance of the ingredients are not classified as hazardous or below the threshold concentration, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: Obtain medical attention if there are signs of breathing difficulties.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and thoroughly clean before reuse.

Eye contact: Flush eyes with water for at least 15 minutes, occasionally lifting eyelids. If pain or redness persists after flushing, obtain medical attention.

Ingestion: Do not induce vomiting. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: Causes skin irritation. Causes serious eye irritation.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens.

Combustion products - Carbon monoxide, Carbon dioxide. Nitrogen based products.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source, wipe up, shovel or vacuum spilled material. Clean up spills immediately as they can be dangerously slippery. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Store at temperatures between 40 - 180°F. Avoid freezing. Keep away from children, infants and pets. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEEL (15 min)
Potassium Hydroxide	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEEL (15 min)
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

NIOSH Exposure Limits		
Substance	TWA	STEEL
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is suggested at points where vapors can be expected to escape to the workplace air or in enclosed areas.

Individual protection measures, such as personal protective equipment:

Eye/face protection: None normally required, but the use of OSHA compliant safety glasses or splash goggles recommended.

Skin and Hand protection: None normally needed -Neoprene if necessary. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None normally required.

Other: Eye wash / eye bath in the work area is recommended but not necessary.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Clear pourable gel.
Color:	Blue.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	6.4 – 8.0 @150°F 6.5 – 8.0 @ 77°F
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	100°C (212°F)
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	No data available
Flammability limit – upper (%):	No data available
Explosive limit – lower (%):	No data available
Explosive limit – upper (%):	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	0.9930-1.0330
Solubility(ies):	Infinite.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	4000 - 6000 cps @ 5 rpm 150°F 7500 – 14000 cps @ 5 rpm 212°F

Other information:

% Volatile by volume: ~ 90%
Percent solids by weight: ~ 10%

SECTION 10: Stability and Reactivity

Reactivity: Not chemically reactive.
Chemical stability: Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: Avoid prolonged storage at temperatures exceeding 190°F. Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens. This condition is unlikely to occur.
Incompatible materials: Avoid contact with strong oxidizers and nitrites.
Hazardous decomposition Products: In the unlikely event of combustion of dried residue, oxides and nitrogen may be released.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: May produce skin irritation.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
Upon prolonged contact, may cause temporary eye discomfort.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Detailed below.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Potassium hydroxide	LD ₅₀ Oral (Rat)	273 mg/kg
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation (Rat)	No data available

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation:	This material may cause skin irritation.
Serious eye damage/eye irritation:	Upon prolonged contact, may cause temporary eye discomfort.
Respiratory sensitization:	No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).
Skin sensitization:	No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for

aspiration hazard (or are below the concentration threshold for classification).

Further information: No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Potassium hydroxide	LC ₅₀	Fish - Gambusia affinis (Mosquito fish)	85 mg/l (24h)
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

Component	Reportable Quantity
Potassium Hydroxide	1000 lbs

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

- Acute Health Hazard:** Yes
- Chronic Health Hazard:** No
- Fire Hazard:** No
- Pressure Hazard:** No
- Reactivity Hazard:** No

Section 313 Toxic Release Inventory (40 CFR 372):
None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65.

Massachusetts Right to Know: Potassium hydroxide is listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: None of the components are listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Potassium hydroxide is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Potassium hydroxide is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2B - Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: April 24, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Revision date: Initial version
Date of issue: 04.24.2015

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Trade name: Aqua-Gel® II Utility Cable Pulling Lubricant

SECTION 1: Identification

Product identifier: Aqua-Gel® II Utility Cable Pulling Lubricant.
Synonyms: None available.
Product Code Number: 31-378, 31-371, 31-375, 31-3855.
SDS number: ID001
Recommended use: Wire Pulling Lubricant.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Skin corrosion/irritation, Category 2.
Serious eye damage/eye irritation, Category 2.

Environmental hazards

Not classified as a physical hazard under GHS criteria.

GHS Signal word: WARNING.

GHS Hazard statement(s): Causes skin irritation.
Causes serious eye irritation.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

- Prevention:** P264 - Wash skin thoroughly after handling.
P280 - Wear protective gloves/eye protection/face protection.
- Response:** P302+P352 – If on skin: Wash with plenty of soap and water.
P305 + P351 + P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/ attention.
P362 - Take off contaminated clothing and wash before reuse.
- Storage:** No storage precautionary statements.
- Disposal:** No disposal precautionary statements.

Hazard(s) not otherwise Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:
Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Potassium Hydroxide (20% solution)	1310-58-3	< 2%

Note: The balance of the ingredients are not classified as hazardous or below the threshold concentration, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: Obtain medical attention if there are signs of breathing difficulties.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and thoroughly clean before reuse.

Eye contact: Flush eyes with water for at least 15 minutes, occasionally lifting eyelids. If pain or redness persists after flushing, obtain medical attention.

Ingestion: Do not induce vomiting. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: Causes skin irritation. Causes serious eye irritation.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens. This condition is unlikely to occur.
Combustion products - Carbon monoxide, Carbon dioxide.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source, wipe up, shovel or vacuum spilled material. Clean up spills immediately as they can be dangerously slippery. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Store at temperatures between 40 - 180°F. Avoid freezing. Keep away from children, infants and pets. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Potassium Hydroxide	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

NIOSH Exposure Limits		
Substance	TWA	STEL
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is suggested at points where vapors can be expected to escape to the workplace air or in enclosed areas.

Individual protection measures, such as personal protective equipment:

Eye/face protection: None normally required, but the use of OSHA compliant safety glasses or splash goggles recommended.

Skin and Hand protection: None normally needed -Neoprene if necessary. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None normally required.

Other: Eye wash / eye bath in the work area is recommended but not necessary.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Gel
Form:	Clear gel.
Color:	Blue.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	6.5 – 8.0
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	100°C (212°F)
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	No data available
Flammability limit – upper (%):	No data available
Explosive limit – lower (%):	No data available
Explosive limit – upper (%):	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	0.9930-1.0330
Solubility(ies):	Infinite.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	20000-40000 cps

Other information:

% Volatile by volume:	< 90%
Percent solids by weight:	~10

SECTION 10: Stability and Reactivity

Reactivity: Not chemically reactive.
Chemical stability: Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: Avoid prolonged storage at temperatures exceeding 190°F.
Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens. This condition is unlikely to occur.
Incompatible materials: Avoid contact with strong oxidizers and nitrites.
Hazardous decomposition Products: In the unlikely event of combustion of dried residue, oxides and nitrogen may be released.

SECTION 11: Toxicological information

Information on likely routes of exposure:
Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: May produce skin irritation.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
Upon prolonged contact, may cause temporary eye discomfort.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Detailed below.

Numerical measures of toxicity:
Ingredient Information:

Substance	Test Type (species)	Value
Potassium hydroxide	LD ₅₀ Oral (Rat)	273 mg/kg
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation (Rat)	No data available

Product Acute Toxicity Estimates:
Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: This material may cause skin irritation.

- Serious eye damage/eye irritation:** Upon prolonged contact, may cause temporary eye discomfort.
- Respiratory sensitization:** No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).
- Skin sensitization:** No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
- Germ cell mutagenicity:** No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
- Carcinogenicity:** No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
- Reproductive toxicity:** No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
- Specific target organ toxicity-
Single exposure:** No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
- Specific target organ toxicity-
Repeat exposure:** No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
- Aspiration hazard:** No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).

Further information: No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Potassium hydroxide	LC ₅₀	Fish - Gambusia affinis (Mosquito fish)	85 mg/l (24h)
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

Component	Reportable Quantity
Potassium Hydroxide	1000 lbs

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65.

Massachusetts Right to Know: Potassium hydroxide is listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: None of the components are listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Potassium hydroxide is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Potassium hydroxide is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2B - Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: April 24, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Revision date: Initial version
Date of issue: 05.02.2015

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Trade name:	Clear Glide™ Wire Pulling Lubricant
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SECTION 1: Identification

Product identifier: Clear Glide™ Wire Pulling Lubricant.
Synonyms: None available.
Product Code Number: 31-388, 31-381, 31-385, 31-2143.
SDS number: ID006
Recommended use: Wire Pulling Lubricant.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Not classified as a health hazard under GHS criteria.

Environmental hazards

Not classified as an environmental hazard under GHS criteria.

GHS Signal word: Not applicable.
GHS Hazard statement(s): Not applicable.
GHS Hazard symbol(s): Not applicable.

GHS Precautionary statement(s):

- Prevention:** No prevention precautionary phrases.
- Response:** No response precautionary phrases.
- Storage:** No storage precautionary phrases.
- Disposal:** No disposal precautionary phrases.

Hazard(s) not otherwise

Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	Concentration (weight %)	CAS#
Not applicable		

There are no ingredients present at above the cut off concentrations for GHS classification and therefore the product is not classified as hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: In case of contact, Wash skin with soap and for at least 15 minutes. Remove contaminated clothing and thoroughly clean before reuse. Get medical attention if symptoms persist.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms persist.

Ingestion: Administer water or milk. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: None expected.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: None expected.
Combustion products - Oxides of carbon, nitrogen and silicone.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Stop spill at source. Wipe up, shovel or vacuum spilled material. Clean up spills immediately as they can be dangerously slippery. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Store at temperatures between 40 - 180 F. Avoid freezing. Keep away from children, infants and pets. Keep in dry location. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep

away from any incompatible material (see Section 10). Protect container(s) against physical damage. Avoid prolonged storage at temperatures exceeding 190 F.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEEL (15 min)
2-Amino-2-methyl-1-propanol	None established	None established

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEEL (15 min)
2-Amino-2-methyl-1-propanol	None established	None established

NIOSH Exposure Limits		
Substance	TWA	STEEL
2-Amino-2-methyl-1-propanol	None established	None established

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Additional means of room ventilation may be required in closed areas.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant Safety glasses or splash goggles are recommended.

Skin and Hand protection: None normally required.

Respiratory protection: None normally required. Where protection from nuisance levels of dusts are desired, use type N95 (US) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH/OSHA.

Other: None required.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Gel
Form:	Clear, colorless gel.
Color:	Colorless.
Odor:	Slight odor.
Odor threshold:	No data available
pH:	7.0 - 8.0
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	212°F (100°C)
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	1.09
Solubility(ies):	Infinite in water.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	25300-40300 cps
Other information:	
% Volatile by volume:	< 98%
Volatile Organic Compounds (VOC) (as packaged, minus water)	17.4 gms/ltr
Percent solids by weight:	~ 5%

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	Avoid prolonged storage at temperatures exceeding 190 F.

Incompatible materials: Avoid strong oxidizers and nitrites.
Hazardous decomposition Products: Oxides of carbon, nitrogen and silicone.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: Expected to be a primary route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:

None normally expected.

Delayed and immediate effects and chronic effects from short or long-term exposure:

Upon prolonged contact, may cause temporary eye discomfort.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
2-Amino-2-methyl-1-propanol	LD ₅₀ Oral (Rat)	2900 mg/kg
	LD ₅₀ Dermal (Rabbit)	> 2000 mg/kg
	LC ₅₀ Inhalation (Rat)	No data available

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: No information available on the mixture, however none of the components have been classified to cause skin corrosion/irritation (or are below the concentration threshold for classification).

Serious eye damage/eye irritation: No information available on the mixture, however none of the components have been classified to cause eye damage/irritation (or are below the concentration threshold for classification).

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization:	No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).
Further information:	No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
2-Amino-2-methyl-1-propanol	LC ₅₀	Lepomis macrochirus (Bluegill sunfish)	190 mg/l (96h)
	LC ₅₀	Aquatic invertebrate – Daphnia magna (water flea)	193 mg/l (48h)
	EyC ₅₀	Algae - Scenedesmus sp	565.5 mg/l (72h)

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

Contact a licensed professional waste disposal service to dispose of this material. The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is not hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): None of the components are listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: None of the components are listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: None of the components are listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: None of the components are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: None of the components are listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: Not hazardous under WHMIS

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: May 2, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Revision date: Initial version
Date of issue: 05.13.2015

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Trade name: Velocity™ Cable Pulling Lubricant

SECTION 1: Identification

Product identifier: Velocity™ Cable Pulling Lubricant.
Synonyms: None available.
Product Code Number: 31-276, 31-277, 31-278.
SDS number: ID020
Recommended use: Wire Pulling Lubricant.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria.

Health hazards

Not classified as a health hazard under GHS criteria

Environmental hazards

Not classified as an environmental hazard under GHS criteria.

GHS Signal word: Not applicable.

GHS Hazard statement(s): Not applicable.

GHS Hazard symbol(s): Not applicable

GHS Precautionary statement(s):

Prevention:

No prevention precautionary statements required.

Response:

No response precautionary statements required

Storage:

No storage precautionary statements required.

Disposal:

No disposal precautionary statements required.

Hazard(s) not otherwise

Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable

SECTION 3: Composition/information on ingredients

Mixture: Polymer-based Mixture

Chemical name	CAS#	Concentration (weight %)
None of the chemical raw materials contained in this formulation are considered hazardous under the Federal Hazards Communication Standard 29 C. F. R 1910.1200		

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: Move to fresh air. Get medical attention if symptoms develop.

Skin contact: Wash off with warm water and soap for 15 minutes. Get medical attention if irritation develops or persists.

Eye contact: Flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Ingestion: Induce vomiting. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: None normally expected. Upon prolonged contact, may cause temporary eye discomfort. If material is used in extreme heat (>120° F), prolonged and repeated exposure could pose a risk of pulmonary disease.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable by OSHA criteria. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: None expected.

Combustion products - Excessive heat and burning may release oxides of carbon and nitrogen.

Special protective equipment and precautions for fire-fighters: Containers should be cooled with water to prevent vapor pressure build up. Cool containers with flooding quantities of water until well after fire is out. Move containers from fire area if you can do so without risk. For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Wipe up, shovel or vacuum spilled material. Clean up spills immediately as they can be dangerously slippery.

SECTION 7: Handling and Storage

Precautions for safe handling: Keep away from children, infants and pets. Avoid contact with skin. Avoid contact with eyes. Wear personal protective equipment. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles:

Store at temperatures between 40 - 120° F. Avoid freezing.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Not applicable		

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Not applicable		

USA. Workplace Environmental Exposure Levels (WEEL)		
Substance	TWA	STEL
Not applicable		

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep mists below exposure limits. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of safety glasses or splash goggles are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

Skin and Hand protection: None normally required. If worn, use neoprene. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: No personal respiratory protective equipment normally required.

Other: Eye fountain in work area is recommended.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state: Gel
Form: Ivory Translucent Gel.
Color: Ivory.
Odor: None.
Odor threshold: No data available

pH:	6.5-8.0.
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	212°F 100°C
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	The product is not flammable.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	0.98
Solubility(ies):	Moderate
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Other information:	
Percent volatile by volume (%):	< 90%
Percent solid by weight:	< 5%

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	None expected.
Incompatible materials:	Avoid strong oxidizers.
Hazardous decomposition Products:	Excessive heat and burning may release oxides of carbon and nitrogen.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation:	Not an expected route of entry.
Ingestion:	Not an expected route of entry.
Skin:	Skin contact is a primary route of entry.
Eyes:	Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:

None normally expected. If material is used in extreme heat (>120° F), prolonged and repeated exposure could pose a risk of pulmonary disease.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Upon prolonged contact, may cause temporary eye discomfort.

Numerical measures of toxicity:
Ingredient Information:

Substance	Test Type (species)	Value
Not applicable	LD ₅₀ Oral (Rat)	
	LD ₅₀ Dermal (Rabbit)	
	LC ₅₀ Inhalation (Rat)	

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: No information available on the mixture, however none of the components have been classified as skin corrosive/irritant (or are below the concentration threshold for classification).

Serious eye damage/eye irritation: No information available on the mixture, however none of the components have been classified as causing eye damage/eye irritation (or are below the concentration threshold for classification).

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization: No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).

Germ cell mutagenicity: No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Carcinogenicity: No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential

carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

Reproductive toxicity:

No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Single exposure:**

No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Repeat exposure:**

No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).

Aspiration hazard:

No information available on the mixture, however none of the components have been classified for Aspiration hazard (or are below the concentration threshold for classification).

Further information:

No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Not applicable	LC ₅₀	Fish	
	LC ₅₀	Aquatic Invertebrates	
	EC ₅₀	Algae	

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

This material is not classified as dangerous under DOT regulations.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations

Environmental hazards

Marine pollutant: No.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

None.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is not hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are exempt from the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: No components are listed on the Massachusetts Right to Know List.

New Jersey Right to Know: No components are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: No components are listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: Not applicable.

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: May 13, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

SECTION: 1. Product and company identification

1.1. Product identifier

Product form : Substance
Name : **Acetylene, dissolved**
CAS No : 74-86-2
Formula : C₂H₂
Other means of identification : Acetylen, ethine, ethyne, narycylene

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Gas 1 H220
Dissolved gas H280

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H220 - EXTREMELY FLAMMABLE GAS
H231 - MAY REACT EXPLOSIVELY EVEN IN THE ABSENCE OF AIR AT ELEVATED PRESSURE AND/OR TEMPERATURE
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, Open flames, sparks, hot surfaces. - No smoking
P271+P403 - Use and store only outdoors or in a well-ventilated place.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P501 - Dispose of contents/container in accordance with container supplier/owner instructions
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG13 - Fusible plugs in the top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F).
Do not discharge at pressures above 15 psig (103 kPa).
CGA-PG06 - Close valve after each use and when empty.

Acetylene, dissolved

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CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

2.3. Other hazards

Other hazards not contributing to the classification : For safety reasons, the acetylene is dissolved in acetone (CAS # 67-64-1; Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) in the gas container. Vapor of the solvent is carried away as impurity when the acetylene is extracted from the gas container. The concentration of the solvent vapor in the gas is lower than the concentration limits to change the classification of the acetylene.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%
Acetylene, dissolved (Main constituent)	(CAS No) 74-86-2	100

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact : For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : See below. See CGA Pamphlet SB-4, Handling Acetylene Cylinders in Fire Situations, for further information.

5.2. Special hazards arising from the substance or mixture

Fire hazard : EXTREMELY FLAMMABLE GAS. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

Acetylene, dissolved

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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5.3. Advice for firefighters

Firefighting instructions	: Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
Protection during firefighting	: Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
Special protective equipment for fire fighters	: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Specific methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. Stop flow of product if safe to do so. Use water spray or fog to knock down fire fumes if possible. Continue water spray from protected position until container stays cool.
Other information	: Acetylene containers are provided with pressure relief devices designed to vent contents when exposed to elevated temperature.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate ventilation. Stop leak if safe to do so.
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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment. Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.
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Acetylene, dissolved

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

Storage area : Acetylene trailers are designed and intended for outdoor use. Acetylene storage in excess of 2.500 cu ft (70.79 cubic meters) is prohibited in buildings and other occupancies.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acetylene, dissolved (74-86-2)	
ACGIH	Not established
USA OSHA	Not established

8.2. Exposure controls

Appropriate engineering controls : An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Consider the use of flame resistant anti-static safety clothing. Wear leather safety gloves and safety shoes when handling cylinders.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Acetylene, dissolved

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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Appearance	: Colorless, odorless gas.
Molecular mass	: 26 g/mol
Color	: Colorless.
Odor	: Garlic like.
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -80.8 °C
Freezing point	: No data available
Boiling point	: -84 °C
Flash point	: No data available
Critical temperature	: 36 °C
Auto-ignition temperature	: 305 °C
Decomposition temperature	: 635 °C
Flammability (solid, gas)	: 2.5 - 100 vol %
Vapor pressure	: 4400 kPa
Critical pressure	: 6138 kPa
Relative vapor density at 20 °C	: No data available
Relative density	: Not applicable.
Specific gravity / density	: 0.0012 g/cm ³ (at 0 °C)
Relative gas density	: 0.9
Solubility	: Water: 1185 mg/l
Log Pow	: 0.37
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosive limits	: No data available

9.2. Other information

Sublimation point	: -83.3 °C
Gas group	: Dissolved gas

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Dissolved in a solvent supported in a porous mass. Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

May react explosively even in the absence of air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst. Can form explosive mixture with air. May react violently with oxidants.

10.4. Conditions to avoid

High temperature. High pressure. Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper. Air, Oxidizer. Do not use alloys containing more than 43% silver.

Acetylene, dissolved

Safety Data Sheet P-4559

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified No known effects from this product.
Aspiration hazard	: Not classified Not applicable.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No known ecological damage caused by this product.

12.2. Persistence and degradability

Acetylene, dissolved (74-86-2)

Persistence and degradability	Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.
-------------------------------	--

12.3. Bioaccumulative potential

Acetylene, dissolved (74-86-2)

Log Pow	0.37
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Acetylene, dissolved (74-86-2)

Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on ozone layer : No known effects from this product.
Effect on the global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

Acetylene, dissolved

Safety Data Sheet P-4559

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1001 Acetylene, dissolved
 UN-No.(DOT) : UN1001
 Proper Shipping Name (DOT) : Acetylene, dissolved
 Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized.
 N88 - Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.

Additional information

Emergency Response Guide (ERG) Number : 116 (UN1001)
 Other information : No supplementary information available.
 Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1001
 Proper Shipping Name (IMDG) : Acetylene, dissolved
 Class (IMDG) : 2 - Gases
 MFAG-No : 116

Air transport

UN-No.(IATA) : 1001
 Proper Shipping Name (IATA) : Acetylene, dissolved
 Class (IATA) : 2
 Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetylene, dissolved (74-86-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard Reactive hazard Fire hazard

15.2. International regulations

CANADA

Acetylene, dissolved (74-86-2)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class F - Dangerously Reactive Material

Acetylene, dissolved

Safety Data Sheet P-4559

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

EU-Regulations

Acetylene, dissolved (74-86-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Gas 1 H220

Dissolved gas H280

Full text of H-phrases: see section 16

15.2.2. National regulations

Acetylene, dissolved (74-86-2)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

Acetylene, dissolved(74-86-2)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date

: 1/12/2015 12:00:00 AM

Acetylene, dissolved

Safety Data Sheet P-4559

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

Other information

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), www.aws.org. Order AWS documents from Global Engineering Documents, global.ihs.com. Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture.

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases.

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

Full text of H-phrases:

Dissolved gas	Gases under pressure Dissolved gas
Flam. Gas 1	Flammable gases Category 1
H220	EXTREMELY FLAMMABLE GAS
H280	CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

NFPA health hazard

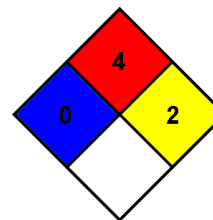
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.





Acetylene, dissolved

Safety Data Sheet P-4559

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 01/12/2015 Supersedes: 07/01/2014

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 4 Severe Hazard
Physical : 2 Moderate Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SECTION: 1. Product and company identification

1.1. Product identifier

Product form : Substance
Name : **Acetylene, dissolved in DMF**
CAS No : 74-86-2
Formula : C₂H₂
Other means of identification : Acetylen, ethine, ethyne, narycylene

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Gas 1 H220
Dissolved gas H280

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H220 - EXTREMELY FLAMMABLE GAS
H231 - MAY REACT EXPLOSIVELY EVEN IN THE ABSENCE OF AIR AT ELEVATED PRESSURE AND/OR TEMPERATURE
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, Open flames, sparks, hot surfaces. - No smoking
P271+P403 - Use and store only outdoors or in a well-ventilated place.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P501 - Dispose of contents/container in accordance with container supplier/owner instructions
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG13 - Fusible plugs in the top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F).
Do not discharge at pressures above 15 psig (103 kPa).
CGA-PG06 - Close valve after each use and when empty.

Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

2.3. Other hazards

Other hazards not contributing to the classification : For safety reasons, the acetylene is dissolved in dimethylformamide (CAS # 68-12-2; Repr. 1B, Acute Tox. 4, Eye Irrit. 2) in the gas container. Vapor of the solvent is carried away as impurity when the acetylene is extracted from the gas container. The concentration of the solvent vapor in the gas is lower than the concentration limits to change the classification of the acetylene.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%
Acetylene, dissolved in DMF (Main constituent)	(CAS No) 74-86-2	100

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact : For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : See below. See CGA Pamphlet SB-4, Handling Acetylene Cylinders in Fire Situations, for further information.

5.2. Special hazards arising from the substance or mixture

Fire hazard : EXTREMELY FLAMMABLE GAS. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

5.3. Advice for firefighters

Firefighting instructions	: Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
Protection during firefighting	: Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.
Special protective equipment for fire fighters	: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Specific methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. Stop flow of product if safe to do so. Use water spray or fog to knock down fire fumes if possible. Continue water spray from protected position until container stays cool.
Other information	: Acetylene containers are provided with pressure relief devices designed to vent contents when exposed to elevated temperature.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate ventilation. Stop leak if safe to do so.
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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment. Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.
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Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

Storage area : Acetylene trailers are designed and intended for outdoor use. Acetylene storage in excess of 2.500 cu ft (70.79 cubic meters) is prohibited in buildings and other occupancies.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acetylene, dissolved in DMF (74-86-2)	
ACGIH	Not established
USA OSHA	Not established

8.2. Exposure controls

Appropriate engineering controls : An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Consider the use of flame resistant anti-static safety clothing. Wear leather safety gloves and safety shoes when handling cylinders.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

Appearance	: Colorless, odorless gas.
Molecular mass	: 26 g/mol
Color	: Colorless.
Odor	: Garlic like.
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -80.8 °C
Freezing point	: No data available
Boiling point	: -84 °C
Flash point	: No data available
Critical temperature	: 36 °C
Auto-ignition temperature	: 305 °C
Decomposition temperature	: 635 °C
Flammability (solid, gas)	: 2.5 - 100 vol %
Vapor pressure	: 4400 kPa
Critical pressure	: 6138 kPa
Relative vapor density at 20 °C	: No data available
Relative density	: Not applicable.
Specific gravity / density	: 0.0012 g/cm ³ (at 0 °C)
Relative gas density	: 0.9
Solubility	: Water: 1185 mg/l
Log Pow	: 0.37
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosive limits	: No data available

9.2. Other information

Sublimation point	: -83.3 °C
Gas group	: Dissolved gas

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Dissolved in a solvent supported in a porous mass. Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

May react explosively even in the absence of air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst. Can form explosive mixture with air. May react violently with oxidants.

10.4. Conditions to avoid

High temperature. High pressure. Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper. Air, Oxidizer. Do not use alloys containing more than 43% silver.

10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified No known effects from this product.
Aspiration hazard	: Not classified Not applicable.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No known ecological damage caused by this product.

12.2. Persistence and degradability

Acetylene, dissolved in DMF (74-86-2)

Persistence and degradability	Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.
-------------------------------	--

12.3. Bioaccumulative potential

Acetylene, dissolved in DMF (74-86-2)

Log Pow	0.37
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Acetylene, dissolved in DMF (74-86-2)

Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on ozone layer : No known effects from this product.
Effect on the global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1001 Acetylene, dissolved
 UN-No.(DOT) : UN1001
 Proper Shipping Name (DOT) : Acetylene, dissolved
 Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized.
 N88 - Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.

Additional information

Emergency Response Guide (ERG) Number : 116 (UN1001)
 Other information : No supplementary information available.
 Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1001
 Proper Shipping Name (IMDG) : Acetylene, dissolved
 Class (IMDG) : 2 - Gases
 MFAG-No : 116

Air transport

UN-No.(IATA) : 1001
 Proper Shipping Name (IATA) : Acetylene, dissolved
 Class (IATA) : 2
 Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetylene, dissolved in DMF (74-86-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard Reactive hazard Fire hazard

15.2. International regulations

CANADA

Acetylene, dissolved in DMF (74-86-2)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class F - Dangerously Reactive Material

Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

EU-Regulations

Acetylene, dissolved in DMF (74-86-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Gas 1 H220

Dissolved gas H280

Full text of H-phrases: see section 16

15.2.2. National regulations

Acetylene, dissolved in DMF (74-86-2)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

Acetylene, dissolved in DMF(74-86-2)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date

: 1/12/2015 12:00:00 AM

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according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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Other information

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), www.aws.org. Order AWS documents from Global Engineering Documents, global.ihs.com. Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture.

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases.

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

Full text of H-phrases:

Dissolved gas	Gases under pressure Dissolved gas
Flam. Gas 1	Flammable gases Category 1
H220	EXTREMELY FLAMMABLE GAS
H280	CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

NFPA health hazard

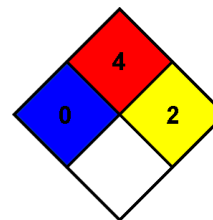
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.





Acetylene, dissolved in DMF

Safety Data Sheet P-6201

according to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1987 Revision date: 01/12/2015 Supersedes: 11/01/2008

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 4 Severe Hazard
Physical : 2 Moderate Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Product name:	CADWELD® Electrical Welding Material	Page:	1/12
Supersedes date:	2013-09-25	Revision:	2015-07-21
SDS-ID:	CADWELD_EWM_US	Version number:	US-EN/3.3

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**Product identifier**

Product name: CADWELD® Electrical Welding Material
Inclusive of material types: F20, F80, F33, XF19, F76
Applicable prefixes: CA, SB, PB, XL, XF, ACB, ACC

Relevant identified uses of the substance or mixture and uses advised against

Application: Exothermic Welding material

Details of the supplier of the safety data sheet

Manufacturer ERICO International Corporation
34600 Solon Road
Solon, Ohio 44139
Tel:(440) 248-0100

Emergency telephone number

Emergency telephone: Chemtel
1-800-255-3924 USA
+01-813-248-0585 International

SAFETY DATA SHEET

Product name:	CADWELD® Electrical Welding Material	Page:	2/12
Supersedes date:	2013-09-25	Revision:	2015-07-21
SDS-ID:	CADWELD_EWM_US	Version number:	US-EN/3.3

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA 2012: Acute Toxicity, category 4;H302

Label elements



WARNING

H302	Harmful if swallowed.
P260	Do not breathe dust/fume
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P273	Avoid release to the environment.
P501	Dispose of contents/container in accordance with local regulations.
P330	Rinse mouth.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.

Other hazards

Other: Improper use of the product or inadequate preparation of the conductors, molds or surroundings can result in aggressive reactions. Self-propagating high temperature reaction will occur if heated above ignition temperature. Generates molten metal in excess of 2500°F (1370°C), slag and dense, dusty smoke. The molten product can cause serious burns. Inhalation of powder or fumes may cause metal fume fever. Exposure to reaction by-products: See section 8.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Only classified substances above threshold limits are shown.

SAFETY DATA SHEET

Product name:	CADWELD® Electrical Welding Material	Page:	3/12
Supersedes date:	2013-09-25	Revision:	2015-07-21
SDS-ID:	CADWELD_EWM_US	Version number:	US-EN/3.3

OSHA 2012:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
25-85	1317-39-1	215-270-7	01-2119513794-36-	Dicopper oxide	Acute Tox. 4;H302 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	M = 1
1-30	1317-38-0	215-269-1	01-2119502447-44-	Copper oxide	Acute Tox. 4;H302 Aquatic Acute 1;H400 Aquatic Chronic 3;H412	M = 1
1-30	7440-50-8	231-159-6	01-2119480154-42-	Copper	Aquatic Acute 1;H400 Aquatic Chronic 3;H412	M = 1
1-20	7429-90-5	231-072-3	01-2119529243-45-	Aluminium powder (stabilised)	Water-react. 2;H261 Flam. Sol. 1;H228	

Notes: M: M-Factor

References: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Molten product will cause skin burns and if in contact with eyes while in a molten state may cause serious damage.

Inhalation: Inhalation of welding fumes/Dust inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. If material is hot, treat for thermal burns and get immediate medical attention.

Eye contact: Dust in the eyes: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

Most important symptoms and effects, both acute and delayed

Symptoms/effects: Inhalation of powder or fumes may cause metal fume fever. Symptoms like headache, fatigue and nausea may appear. See section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Burns (in contact with molten metal, slag or hot equipment): Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

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Product name:	CADWELD® Electrical Welding Material	Page:	4/12
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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Extinguishing media: Extinguish with dry sand and/or flood with large amounts of water.

Extinguishing media which are not suitable: Hand water buckets or hand storage pumps. Molten metal contact with water can cause small pockets of superheated steam.

Use fire-extinguishing media appropriate for surrounding materials.

Special hazards arising from the substance or mixture

Specific hazards: During fire, health hazardous gases may be formed.
Ignition temperature: >1750°F

In the event that the packaging materials are ignited, the immediate and direct application of large quantities of water will effectively eliminate the spread of fire to the surrounding areas. The ignition of the packaging materials may, in rare cases, lead to ignition. Direct application of a continuous heavy stream of water is recommended.

Ignition of large quantities of exothermic materials may result in large volumes of dense smoke.

Advice for firefighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

Remove sources of ignition. Ventilate well.

Environmental precautions

Environmental precautions: Precaution should be taken to prevent hot material and reaction byproducts from contact with combustible materials in surrounding areas. Avoid spreading dust or contaminated materials. Avoid discharge to the aquatic environment. Contact local authorities in case of spillage to drain/aquatic environment.

Methods and material for containment and cleaning up

Spill Cleanup Methods: Remove sources of ignition. Sweep up spilled substance and remove to safe place.
For large spills use natural fiber brush or broom with a conductive, non-sparking pan.

Reference to other sections

References: For personal protection, see section 8. For waste disposal, see section 13.

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Product name:	CADWELD® Electrical Welding Material	Page:	5/12
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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe handling advice: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Observe good chemical hygiene practices. CADWELD Exothermic Welding Materials and Filler Materials are designed for use in CADWELD equipment only. Use of improper or damaged equipment can lead to exposure to molten metal and reaction byproducts.

Technical measures: Do not smoke or use open fire or other sources of ignition. Work practice should minimize risk of contact. All product instructions should be followed to ensure proper welding and safety. For additional information, see American National Standard, Safety In Welding And Cutting, and Z49.1.

Technical precautions: Confined space: Local exhaust is recommended.

Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: CADWELD Electrical Welding Material should be stored in a clean, dry and secure location. Storage should include provisions to minimize rough handling, excessive vibration and physical abuse. All outer packages must be stored in accordance with label markings.

Storage conditions: If evidence is present of damaged or contaminated products, these units should not be used.

If proper storage is maintained, CADWELD Materials do not exhibit any storage or shelf life.

Specific end use(s)

Specific use(s): Welding material

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

A detailed fume analysis was conducted on CADWELD Electrical Welding Materials. Reactions byproducts were tested for total dust, respirable dust, metals, acids, fluorides, and various elements identified in typical welding fume analysis. All sampling and analysis followed methodologies dictated by the National Institute of Occupational Safety and Health (NIOSH) and by the Occupational Safety and Health Administration (OSHA). A certified Industrial Hygienist did the sample collection and independent labs conducted all analytical work. Data collected was evaluated and compared to limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) and OSHA. As a worst case scenario, calculations were completed based on a sealed 800 ft³ room with no ventilation. These calculations would indicate that the copper fume PEL would be the limiting factor. Under normal outdoor use or in ventilated areas threshold limits are beyond any expected exposure limits.

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Product name: CADWELD® Electrical Welding Material Page: 6/12
Supersedes date: 2013-09-25 Revision: 2015-07-21
SDS-ID: CADWELD_EWM_US Version number: US-EN/3.3

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
7429-90-5	Aluminum, metal, respirable fraction	Al	5 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum, metal, total dust	Al	15 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum metal, respirable fraction	-	1 mg/m3	TWA	A4	ACGIH
7440-21-3	Silicon, respirable fraction	-	5 mg/m3	TWA	-	OSHA
7440-21-3	Silicon, total dust	-	15 mg/m3	TWA	-	OSHA
7440-31-5	Tin, metal	Sn	2 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, dusts and mists	Cu	1 mg/m3	TWA	-	OSHA
7440-50-8	Copper dusts and mists	Cu	1 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	Cu	0.1 mg/m3	TWA	-	OSHA
7440-50-8	Copper, fume	-	0.2 mg/m3	TWA	-	ACGIH
-	Fluorides	F	2.5 mg/m3	TWA	-	OSHA
-	Fluorides	F	2.5 mg/m3	TWA	A4; BEI	ACGIH

Notes: A4: Not Classifiable as a Human Carcinogen.

Exposure controls

Engineering measures: Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust and fumes.

Personal protection: Personal protection equipment should be chosen according to the relevant standards and in discussion with the supplier of the personal protective equipment. Use special welding equipment for protection of eyes, skin and respiratory system.

Respiratory equipment: Normal use precludes use of special protection as material is generally used out of doors, in small quantities and is of short duration. In case of inadequate ventilation and work of long duration or on large surface areas in confined rooms. Wear suitable respiratory equipment for dusts and metal fumes.

Hand protection: Heat insulated protective gloves. Recommended for handling hot equipment.

Eye protection: Wear goggles/face shield. Avoid direct eye contact with "flash" of light from reaction.

Skin protection: Use protective clothing, which covers arms and legs.

Hygiene measures: Wash hands after handling. Change contaminated clothing.

SAFETY DATA SHEET

Product name: CADWELD® Electrical Welding Material
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SDS-ID: CADWELD_EWM_US

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form: Granular.
Color: Gray-black
Odor: Odorless.
pH: Not available.
Melting point / freezing point: 2000°F
Boiling point: Not available.
Evaporation rate: Not relevant.
Vapor pressure: Not relevant.
Vapor density: Not relevant.
Solubility: Insoluble in water
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°C): > 1750°F
Decomposition temperature (°C): Not available.
Viscosity: Not relevant.
Explosive properties: Not available.
Oxidizing properties: Not available.
Other information
Other data: SPECIFIC GRAVITY (water=1): 5.5

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SECTION 10: STABILITY AND REACTIVITY

Reactivity

Reactivity: See hazardous reactions.

Chemical stability

Stability: Stable. Not sensitive to vibrations, shock or impact and is not subject to spontaneous ignition.

Possibility of hazardous reactions

Hazardous Reactions: Aggressive reactions are possible if excess moisture is present in the mold or on the conductors to be welded. Care should be taken to ensure proper preparation in accordance with instruction prints.

Conditions to avoid

Conditions/materials to avoid: Temperatures above ignition point. 1750°F

Incompatible materials

Incompatible materials: Typical of problems associated with molten metals.

Hazardous decomposition products

Hazardous decomposition products: None under normal conditions. Polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhalation: Dust may irritate throat and respiratory system and cause coughing. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Skin contact: Dust has an irritating effect on moist skin. Prolonged and/or repeated contact: May cause eczema-like skin disorders (dermatitis). The molten product can cause serious burns.

Eye contact: Particles/fumes in the eyes may cause discomfort/irritation.

Ingestion: Ingestion may cause nausea, headache, dizziness and intoxication.
Dicopper oxide: LD50 > 500 mg/kg

Specific effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Copper oxide may by repeated or prolonged inhalation occasionally cause ulceration and perforation of the nasal septum. Long term exposure to copper containing dusts may cause allergic dermatitis.
This product contains no ingredient listed on the NTP, OSHA or IARC carcinogen lists.

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SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Dicopper oxide: EC50 (Daphnia magna, 48 hours): 0.51 mg/l

Persistence and degradability

Degradability: The product solely consists of inorganic compounds which are not biodegradable.

Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

Mobility in soil

Mobility: The product is not volatile but may be spread by dust-raising handling.

Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

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Product name:	CADWELD® Electrical Welding Material	Page:	10/12
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SECTION 14: TRANSPORT INFORMATION

The product material has been tested by independent facilities in accordance with D.O.T. / U.N. CFR 49 and I.A.T.A. Dangerous Goods Regulations to determine the applicable ratings of this material. Based on the results of this testing, the CADWELD Electrical Welding Material is not classified as a flammable solid.

Due to the minimal quantity present per package, this material and the CADWELD Electrical Welding Material package is shipped under provisions outlined under D.O.T. / U.N. 49 CFR 171.1 "General Regulations for the Transportation of Hazardous Material" and 173.4 "Exceptions for Small Quantities". All materials are packaged and marked at the factory in full compliance with these regulations. The product is covered by international regulation on the transport of dangerous goods (IMDG, IATA).

UN number

UN-No: -

UN proper shipping name

Proper Shipping Name: -

Transport hazard class(es)

Class: -

Packing group

PG: -

Environmental hazards

Marine pollutant: -

Environmentally Hazardous substance: -

Special precautions for user

Special precautions: -

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: -

SAFETY DATA SHEET

Product name:	CADWELD® Electrical Welding Material	Page:	11/12
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SDS-ID:	CADWELD_EWM_US	Version number:	US-EN/3.3

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Special provisions: State and local regulation may apply.
TSCA: The ingredients of this product are on the TSCA Inventory.
SARA Section 302: No
SARA Section 313: Yes

NFPA Rating: Health:2 Fire:1 Reactivity:1 Other:-
HMIS Rating: Health:2 Fire:1 Reactivity:1 Personal protection:B

B = Safety Glasses and Gloves.

National regulation: The following lists have been checked:
Threshold Limit Values (2014), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Air contaminants (OSHA), with amendments.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Hazard Communication, with amendments.
U.S. Department of health and human services: 2014 - Report on Carcinogens - 13th Edition.
International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, World Health Organization.
Threshold Limit Values (2015), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation. Title 40, part 355.50. Emergency Planning and Notification.
The Code of Federal Regulation. Title 40, part 372.65. Toxic Chemical Release Reporting: Community Right to Know.

Chemical Safety Assessment in compliance with Regulation (EC) No 1907/2006 (REACH)

CSA status: Not relevant.

SAFETY DATA SHEET

Product name:	CADWELD® Electrical Welding Material	Page:	12/12
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SDS-ID:	CADWELD_EWM_US	Version number:	US-EN/3.3

SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 1-16

Abbreviations and acronyms PBT = Persistent, Bioaccumulative and Toxic.
used in the safety data sheet: vPvB = very Persistent and very Bioaccumulative.

Wording of H-statements:

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

SAFETY DATA SHEET

Product name:	CADWELD® Plus Welding Material	Page:	1/12
Supersedes date:	2013-09-25	Revision:	2015-07-21
SDS-ID:	CADWELD_PLUS_US	Version number:	US-EN/4.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name: CADWELD® Plus Welding Material
Inclusive of material types: F20, F80, F33, XF19
Applicable prefixes: SB, PB, CA

Relevant identified uses of the substance or mixture and uses advised against

Application: Exothermic Welding material

Details of the supplier of the safety data sheet

Manufacturer ERICO International Corporation
34600 Solon Road
Solon, Ohio 44139
Tel:(440) 248-0100

Emergency telephone number

Emergency telephone: Chemtel
1-800-255-3924 USA
+01-813-248-0585 International

SAFETY DATA SHEET

Product name: CADWELD® Plus Welding Material
Supersedes date: 2013-09-25
SDS-ID: CADWELD_PLUS_US

Page: 2/12
Revision: 2015-07-21
Version number: US-EN/4.0

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA 2012: Acute Toxicity, category 4;H302

Label elements



WARNING

H302 Harmful if swallowed.

P260 Do not breathe dust/fume

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P273 Avoid release to the environment.

P501 Dispose of contents/container in accordance with local regulations.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P330 Rinse mouth.

Other hazards

Other: Improper use of the product or inadequate preparation of the conductors, molds or surroundings can result in aggressive reactions. Self-propagating high temperature reaction will occur if heated above ignition temperature. Generates molten metal in excess of 2500°F (1370°C), slag and dense, dusty smoke. The molten product can cause serious burns. Inhalation of powder or fumes may cause metal fume fever. Exposure to reaction by-products: See section 8.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Only classified substances above threshold limits are shown.

SAFETY DATA SHEET

Product name:	CADWELD® Plus Welding Material	Page:	3/12
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SDS-ID:	CADWELD_PLUS_US	Version number:	US-EN/4.0

OSHA 2012:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
25-85	1317-39-1	215-270-7	01-2119513794-36-	Dicopper oxide	Acute Tox. 4;H302 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	M = 1
1-30	1317-38-0	215-269-1	01-2119502447-44-	Copper oxide	Acute Tox. 4;H302 Aquatic Acute 1;H400 Aquatic Chronic 3;H412	M = 1
1-30	7440-50-8	231-159-6	01-2119480154-42-	Copper	Aquatic Acute 1;H400 Aquatic Chronic 3;H412	M = 1
1-20	7429-90-5	231-072-3	01-2119529243-45-	Aluminium powder (stabilised)	Water-react. 2;H261 Flam. Sol. 1;H228	

Notes: M: M-Factor

References: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Molten product will cause skin burns and if in contact with eyes while in a molten state may cause serious damage.

Inhalation: Inhalation of welding fumes/Dust inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. If material is hot, treat for thermal burns and get immediate medical attention.

Eye contact: Dust in the eyes: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

Most important symptoms and effects, both acute and delayed

Symptoms/effects: Inhalation of powder or fumes may cause metal fume fever. Symptoms like headache, fatigue and nausea may appear. See section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Burns (in contact with molten metal, slag or hot equipment): Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

SAFETY DATA SHEET

Product name:	CADWELD® Plus Welding Material	Page:	4/12
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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Extinguishing media: Extinguish with dry sand and/or flood with large amounts of water.

Extinguishing media which are not suitable: Hand water buckets or hand storage pumps. Molten metal contact with water can cause small pockets of superheated steam.

Use fire-extinguishing media appropriate for surrounding materials.

Special hazards arising from the substance or mixture

Specific hazards: During fire, health hazardous gases may be formed.
Ignition temperature: >1750°F

In the event that the packaging materials are ignited, the immediate and direct application of large quantities of water will effectively eliminate the spread of fire to the surrounding areas. The ignition of the packaging materials may, in rare cases, lead to ignition. Direct application of a continuous heavy stream of water is recommended.

Ignition of large quantities of exothermic materials may result in large volumes of dense smoke.

Advice for firefighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

Remove sources of ignition. Ventilate well.

Environmental precautions

Environmental precautions: Precaution should be taken to prevent hot material and reaction byproducts from contact with combustible materials in surrounding areas. Avoid spreading dust or contaminated materials. Avoid discharge to the aquatic environment. Contact local authorities in case of spillage to drain/aquatic environment.

Methods and material for containment and cleaning up

Spill Cleanup Methods: Remove sources of ignition. Sweep up spilled substance and remove to safe place.
For large spills use natural fiber brush or broom with a conductive, non-sparking pan.

Reference to other sections

References: For personal protection, see section 8. For waste disposal, see section 13.

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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe handling advice: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Observe good chemical hygiene practices. CADWELD PLUS integrated packages are designed for use in CADWELD equipment only. Use of improper or damaged equipment can lead to exposure to molten metal and reaction byproducts.

Technical measures: Do not smoke or use open fire or other sources of ignition. Work practice should minimize risk of contact. All product instructions should be followed to ensure proper welding and safety. For additional information, see American National Standard, Safety In Welding And Cutting, and Z49.1.

Technical precautions: Confined space: Local exhaust is recommended.

Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: CADWELD PLUS material should be stored in a clean, dry and secure location. Storage should include provisions to minimize rough handling, excessive vibration and physical abuse. All outer packages must be stored in accordance with label markings.

Storage conditions: If evidence is present of damaged or contaminated products, these units should not be used.

If proper storage is maintained, the CADWELD PLUS unit and CADWELD Welding Materials do not exhibit any storage or shelf life.

Specific end use(s)

Specific use(s): Welding material

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

A detailed fume analysis was conducted on CADWELD PLUS. Reaction byproducts were tested for total dust, respirable dust, metals, acids, fluorides, various elements, and volatile organic compounds (VOC's). All sampling and analysis followed methodologies dictated by the National Institute of Occupational Safety and Health (NIOSH) and by the Occupational Safety and Health Administration (OSHA). A certified Industrial Hygienist did the sample collection and independent labs conducted all analytical work.

Data collected was evaluated and compared to limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) and OSHA. As a worse case scenario, calculations were completed based on a sealed 800 ft³ room with no ventilation. These calculations would indicate that the copper fume PEL would be the limiting factor. Under normal outdoor use or in ventilated areas threshold limits are beyond any expected exposure limits.

SAFETY DATA SHEET

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SDS-ID: CADWELD_PLUS_US Version number: US-EN/4.0

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
7429-90-5	Aluminum, metal, respirable fraction	Al	5 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum, metal, total dust	Al	15 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum metal, respirable fraction	-	1 mg/m3	TWA	A4	ACGIH
7440-21-3	Silicon, respirable fraction	-	5 mg/m3	TWA	-	OSHA
7440-21-3	Silicon, total dust	-	15 mg/m3	TWA	-	OSHA
7440-31-5	Tin, metal	Sn	2 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, dusts and mists	Cu	1 mg/m3	TWA	-	OSHA
7440-50-8	Copper, fume	Cu	0.1 mg/m3	TWA	-	OSHA
7440-50-8	Copper dusts and mists	Cu	1 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	-	0.2 mg/m3	TWA	-	ACGIH
-	Fluorides	F	2.5 mg/m3	TWA	-	OSHA
-	Fluorides	F	2.5 mg/m3	TWA	A4; BEI	ACGIH

Notes: A4: Not Classifiable as a Human Carcinogen.

Exposure controls

Engineering measures: Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust and fumes.

Personal protection: Personal protection equipment should be chosen according to the relevant standards and in discussion with the supplier of the personal protective equipment. Use special welding equipment for protection of eyes, skin and respiratory system.

Respiratory equipment: Normal use precludes use of special protection as material is generally used out of doors, in small quantities and is of short duration. In case of inadequate ventilation and work of long duration or on large surface areas in confined rooms. Wear suitable respiratory equipment for dusts and metal fumes.

Hand protection: Heat insulated protective gloves. Recommended for handling hot equipment.

Eye protection: Wear goggles/face shield. Avoid direct eye contact with "flash" of light from reaction.

Skin protection: Use protective clothing, which covers arms and legs.

Hygiene measures: Wash hands after handling. Change contaminated clothing.

SAFETY DATA SHEET

Product name: CADWELD® Plus Welding Material
Supersedes date: 2013-09-25
SDS-ID: CADWELD_PLUS_US

Page: 7/12
Revision: 2015-07-21
Version number: US-EN/4.0

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form: Granular.
Color: Gray-black
Odor: Odorless.
pH: Not available.
Melting point / freezing point: 2000°F
Boiling point: Not available.
Evaporation rate: Not relevant.
Vapor pressure: Not relevant.
Vapor density: Not relevant.
Solubility: Insoluble in water
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°C): > 1750°F
Decomposition temperature (°C): Not available.
Viscosity: Not relevant.
Explosive properties: Not available.
Oxidizing properties: Not available.
Other information
Other data: SPECIFIC GRAVITY (water=1): 5.5

SAFETY DATA SHEET

Product name:	CADWELD® Plus Welding Material	Page:	8/12
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SECTION 10: STABILITY AND REACTIVITY

Reactivity

Reactivity: See hazardous reactions.

Chemical stability

Stability: Stable. Not sensitive to vibrations, shock or impact and is not subject to spontaneous ignition.

Possibility of hazardous reactions

Hazardous Reactions: Aggressive reactions are possible if excess moisture is present in the mold or on the conductors to be welded. Care should be taken to ensure proper preparation in accordance with instruction prints.

Conditions to avoid

Conditions/materials to avoid: Temperatures above ignition point. 1750°F

Incompatible materials

Incompatible materials: Typical of problems associated with molten metals.

Hazardous decomposition products

Hazardous decomposition products: None under normal conditions. Polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhalation: Dust may irritate throat and respiratory system and cause coughing. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Skin contact: Dust has an irritating effect on moist skin. Prolonged and/or repeated contact: May cause eczema-like skin disorders (dermatitis). The molten product can cause serious burns.

Eye contact: Particles/fumes in the eyes may cause discomfort/irritation.

Ingestion: Ingestion may cause nausea, headache, dizziness and intoxication.
Dicopper oxide: LD50 > 500 mg/kg

Specific effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Copper oxide may by repeated or prolonged inhalation occasionally cause ulceration and perforation of the nasal septum. Long term exposure to copper containing dusts may cause allergic dermatitis.
This product contains no ingredient listed on the NTP, OSHA or IARC carcinogen lists.

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SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Dicopper oxide: EC50 (Daphnia magna, 48 hours): 0.51 mg/l

Persistence and degradability

Degradability: The product solely consists of inorganic compounds which are not biodegradable.

Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

Mobility in soil

Mobility: The product is not volatile but may be spread by dust-raising handling.

Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

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SECTION 14: TRANSPORT INFORMATION

The product material has been tested by independent facilities in accordance with D.O.T. / U.N. CFR 49 and I.A.T.A. Dangerous Goods Regulations to determine the applicable ratings of this material. Based on the results of this testing, the exothermic mixture contained within the CADWELD PLUS unit and the unit itself is not classified as a flammable solid. These findings indicate that no special package label and no special restrictions apply for transport or shipping of this material by motor vehicle, rail car, sea or air.

UN number

UN-No: -

UN proper shipping name

Proper Shipping Name: -

Transport hazard class(es)

Class: -

Packing group

PG: -

Environmental hazards

Marine pollutant: -

Environmentally Hazardous substance: -

Special precautions for user

Special precautions: -

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: -

SAFETY DATA SHEET

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SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Special provisions: State and local regulation may apply.
TSCA: The ingredients of this product are on the TSCA Inventory.
SARA Section 302: No
SARA Section 313: Yes

NFPA Rating: Health:2 Fire:1 Reactivity:1 Other:-
HMIS Rating: Health:2 Fire:1 Reactivity:1 Personal protection:B

B = Safety Glasses and Gloves.

National regulation: The following lists have been checked:
Threshold Limit Values (2014), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Air contaminants (OSHA), with amendments.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Hazard Communication, with amendments.
U.S. Department of health and human services: 2014 - Report on Carcinogens - 13th Edition.
International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, World Health Organization.
Threshold Limit Values (2015), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation. Title 40, part 355.50. Emergency Planning and Notification.
The Code of Federal Regulation. Title 40, part 372.65. Toxic Chemical Release Reporting: Community Right to Know.

Chemical Safety Assessment in compliance with Regulation (EC) No 1907/2006 (REACH)

CSA status: Not relevant.

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SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 1-16

Abbreviations and acronyms PBT = Persistent, Bioaccumulative and Toxic.
used in the safety data sheet: vPvB = very Persistent and very Bioaccumulative.

Wording of H-statements:

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

SAFETY DATA SHEET

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SDS-ID:	CADWELD_SM_US	Version number:	US-EN/3.1

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name: CADWELD® Starting Material
Inclusive of material types: F20, F80, F33, XF19, F76, RBF, Aluminum.
Applicable prefixes: CA, SB, PB, XF, ACB, ACC, RBF

Relevant identified uses of the substance or mixture and uses advised against

Application: Exothermic Welding material

Details of the supplier of the safety data sheet

Manufacturer ERICO International Corporation
34600 Solon Road
Solon, Ohio 44139
Tel:(440) 248-0100

Emergency telephone number

Emergency telephone: Chemtel
1-800-255-3924 USA
+01-813-248-0585 International

SAFETY DATA SHEET

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SDS-ID:	CADWELD_SM_US	Version number:	US-EN/3.1

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

This product is not sold separately. The following information is provided in regards to the final product making use of Starting Material as its ignition component.

OSHA 2012: Flammable Solid, category 2;H228 - Acute Toxicity, category 4;H302

Label elements



WARNING

H228	Flammable solid.
H302	Harmful if swallowed.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume
P280	Wear eye protection and gloves.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P273	Avoid release to the environment.
P501	Dispose of contents/container in accordance with local regulations.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P330	Rinse mouth.

Other hazards

Other: Improper use of the product or inadequate preparation of the conductors, molds or surroundings can result in aggressive reactions. Self-propagating high temperature reaction will occur if heated above ignition temperature. Generates molten metal in excess of 2500°F (1370°C), slag and dense, dusty smoke. The molten product can cause serious burns. Inhalation of powder or fumes may cause metal fume fever. Exposure to reaction by-products: See section 8.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Only classified substances above threshold limits are shown.

SAFETY DATA SHEET

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SDS-ID: CADWELD_SM_US Version number: US-EN/3.1

OSHA 2012:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
30-60	7429-90-5	231-072-3	01-2119529243-45-	Aluminium powder (stabilised)	Water-react. 2;H261 Flam. Sol. 1;H228	
1-30	1317-38-0	215-269-1	01-2119502447-44-	Copper oxide	Acute Tox. 4;H302 Aquatic Acute 1;H400 Aquatic Chronic 3;H412	M = 1
1-<25	1317-39-1	215-270-7	01-2119513794-36-	Dicopper oxide	Acute Tox. 4;H302 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	M = 1

Notes: M: M-Factor

References: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Molten product will cause skin burns and if in contact with eyes while in a molten state may cause serious damage.

Inhalation: Inhalation of welding fumes/Dust inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. If material is hot, treat for thermal burns and get immediate medical attention.

Eye contact: Dust in the eyes: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

Most important symptoms and effects, both acute and delayed

Symptoms/effects: Inhalation of powder or fumes may cause metal fume fever. Symptoms like headache, fatigue and nausea may appear. See section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Burns (in contact with molten metal, slag or hot equipment): Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

SAFETY DATA SHEET

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SDS-ID:	CADWELD_SM_US	Version number:	US-EN/3.1

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Extinguishing media: Extinguish with dry sand and/or flood with large amounts of water.

Extinguishing media which are not suitable: Hand water buckets or hand storage pumps. Molten metal contact with water can cause small pockets of superheated steam.

Use fire-extinguishing media appropriate for surrounding materials.

Special hazards arising from the substance or mixture

Specific hazards: During fire, health hazardous gases may be formed.
Ignition temperature: 850°F

The ignition of the packaging materials may, in rare cases, lead to ignition. Direct application of water is not recommended. This product makes use of fine grade aluminums that have the potential to have adverse chemical reactions if exposed to large volumes of water. These reactions can result in evolution of hydrogen gas that can significantly increase fire intensity and potential "explosion" hazards.

Ignition of large quantities of exothermic materials may result in large volumes of dense smoke.

Advice for firefighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

Remove sources of ignition. Ventilate well.

Environmental precautions

Environmental precautions: Precaution should be taken to prevent hot material and reaction byproducts from contact with combustible materials in surrounding areas. Avoid spreading dust or contaminated materials. Avoid discharge to the aquatic environment. Contact local authorities in case of spillage to drain/aquatic environment.

Methods and material for containment and cleaning up

Spill Cleanup Methods: Remove sources of ignition. Sweep up spilled substance and remove to safe place.
For large spills use natural fiber brush or broom with a conductive, non-sparking pan.

Reference to other sections

References: For personal protection, see section 8. For waste disposal, see section 13.

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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe handling advice: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Observe good chemical hygiene practices. CADWELD Exothermic Welding Materials and Filler Materials are designed for use in CADWELD equipment only. Use of improper or damaged equipment can lead to exposure to molten metal and reaction byproducts.

Technical measures: Do not smoke or use open fire or other sources of ignition. Work practice should minimize risk of contact. All product instructions should be followed to ensure proper welding and safety. For additional information, see American National Standard, Safety In Welding And Cutting, and Z49.1.

Technical precautions: Confined space: Local exhaust is recommended.

Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: CADWELD Electrical Welding Materials and Filler Materials should be stored in a clean, dry and secure location. Storage should include provisions to minimize rough handling, excessive vibration and physical abuse. All outer packages must be stored in accordance with label markings. Follow the rules for storage of flammable products.

Storage conditions: If evidence is present of damaged or contaminated products, these units should not be used.

If proper storage is maintained, CADWELD Materials do not exhibit any storage or shelf life.

Specific end use(s)

Specific use(s): Welding material

SAFETY DATA SHEET

Product name: CADWELD® Starting Material Page: 6/12
Supersedes date: 2013-02-19 Revision: 2015-07-21
SDS-ID: CADWELD_SM_US Version number: US-EN/3.1

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

A detailed fume analysis was conducted on CADWELD Starting Material. Reaction byproducts were tested for total dust, respirable dust, metals, acids, fluorides, and various elements identified in typical welding fume analysis. All sampling and analysis followed methodologies dictated by the National Institute of Occupational Safety and Health (NIOSH) and by the Occupational Safety and Health Administration (OSHA). A certified Industrial Hygienist did the sample collection and independent labs conducted all analytical work. Data collected was evaluated and compared to limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) and OSHA. No threshold limits are attainable with use of this product as intended.

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
7429-90-5	Aluminum, metal, respirable fraction	Al	5 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum, metal, total dust	Al	15 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum metal, respirable fraction	-	1 mg/m3	TWA	A4	ACGIH
7440-50-8	Copper, dusts and mists	Cu	1 mg/m3	TWA	-	OSHA
7440-50-8	Copper dusts and mists	Cu	1 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	-	0.2 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	Cu	0.1 mg/m3	TWA	-	OSHA
1309-37-1	Iron oxide fume	-	10 mg/m3	TWA	-	OSHA
-	Iron oxide (Fe2O3), respirable fraction	-	5 mg/m3	TWA	A4	ACGIH

Notes: A4: Not Classifiable as a Human Carcinogen.

Exposure controls

Engineering measures: Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust and fumes.

Personal protection: Personal protection equipment should be chosen according to the relevant standards and in discussion with the supplier of the personal protective equipment. Use special welding equipment for protection of eyes, skin and respiratory system.

Respiratory equipment: Normal use precludes use of special protection as material is generally used out of doors, in small quantities and is of short duration. In case of inadequate ventilation and work of long duration or on large surface areas in confined rooms. Wear suitable respiratory equipment for dusts and metal fumes.

Hand protection: Heat insulated protective gloves. Recommended for handling hot equipment.

Eye protection: Wear goggles/face shield. Avoid direct eye contact with "flash" of light from reaction.

Skin protection: Use protective clothing, which covers arms and legs.

Hygiene measures: Wash hands after handling. Change contaminated clothing.

SAFETY DATA SHEET

Product name: CADWELD® Starting Material
Supersedes date: 2013-02-19
SDS-ID: CADWELD_SM_US

Page: 7/12
Revision: 2015-07-21
Version number: US-EN/3.1

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form: Powder
Color: Gray-black
Odor: Odorless.
pH: Not available.
Melting point / freezing point: 1220°F
Boiling point: Not available.
Evaporation rate: Not relevant.
Vapor pressure: Not relevant.
Vapor density: Not relevant.
Solubility: Insoluble in water
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°C): >850°F
Decomposition temperature (°C): Not available.
Viscosity: Not relevant.
Explosive properties: Not available.
Oxidizing properties: Not available.
Other information
Other data: SPECIFIC GRAVITY (water=1): 4.0

SAFETY DATA SHEET

Product name:	CADWELD® Starting Material	Page:	8/12
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SDS-ID:	CADWELD_SM_US	Version number:	US-EN/3.1

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Reactivity: See hazardous reactions.

Chemical stability

Stability: Stable. Not sensitive to vibrations, shock or impact and is not subject to spontaneous ignition.

Possibility of hazardous reactions

Hazardous Reactions: Aggressive reactions are possible if excess moisture is present in the mold or on the conductors to be welded. Care should be taken to ensure proper preparation in accordance with instruction prints.

Conditions to avoid

Conditions/materials to avoid: Temperatures above ignition point. 850°F

Incompatible materials

Incompatible materials: Typical of problems associated with molten metals.

Hazardous decomposition products

Hazardous decomposition products: None under normal conditions. Polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhalation: Dust may irritate throat and respiratory system and cause coughing. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Skin contact: Dust has an irritating effect on moist skin. Prolonged and/or repeated contact: May cause eczema-like skin disorders (dermatitis). The molten product can cause serious burns.

Eye contact: Particles/fumes in the eyes may cause discomfort/irritation.

Ingestion: Ingestion may cause nausea, headache, dizziness and intoxication.
Dicopper oxide: LD50 > 500 mg/kg

Specific effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Copper oxide may by repeated or prolonged inhalation occasionally cause ulceration and perforation of the nasal septum. Long term exposure to copper containing dusts may cause allergic dermatitis.
This product contains no ingredient listed on the NTP, OSHA or IARC carcinogen lists.

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SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Dicopper oxide: EC50 (Daphnia magna, 48 hours): 0.51 mg/l

Persistence and degradability

Degradability: The product solely consists of inorganic compounds which are not biodegradable.

Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

Mobility in soil

Mobility: The product is not volatile but may be spread by dust-raising handling.

Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

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SECTION 14: TRANSPORT INFORMATION

Not shipped or sold separately

Due to the minimal quantity present per package, this material and the CADWELD Welding Materials and Filler Materials package is shipped under provisions outlined under D.O.T. / U.N. 49 CFR 171.1 "General Regulations for the Transportation of Hazardous Material" and 173.4 "Exceptions for Small Quantities". All materials are packaged and marked at the factory in full compliance with these regulations.

UN number

UN-No: 3089

UN proper shipping name

Proper Shipping Name: METAL POWDER, FLAMMABLE, N.O.S. (Aluminum powder (stabilized))

Transport hazard class(es)

Class: 4.1

Packing group

PG: II

Environmental hazards

Marine pollutant: -

Environmentally Hazardous substance: -

Special precautions for user

Special precautions: -

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: -

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SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Special provisions: State and local regulation may apply.

TSCA: The ingredients of this product are on the TSCA Inventory.
SARA Section 302: No
SARA Section 313: Yes

NFPA Rating: Health:2 Fire:1 Reactivity:1 Other:-
HMIS Rating: Health:2 Fire:1 Reactivity:1 Personal protection:B

B = Safety Glasses and Gloves.

National regulation:

The following lists have been checked:
Threshold Limit Values (2014), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Air contaminants (OSHA), with amendments.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Hazard Communication, with amendments.
U.S. Department of health and human services: 2014 - Report on Carcinogens - 13th Edition.
International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, World Health Organization.
Threshold Limit Values (2015), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation. Title 40, part 355.50. Emergency Planning and Notification.
The Code of Federal Regulation. Title 40, part 372.65. Toxic Chemical Release Reporting: Community Right to Know.

Chemical Safety Assessment in compliance with Regulation (EC) No 1907/2006 (REACH)

CSA status: Not relevant.

SAFETY DATA SHEET

Product name:	CADWELD® Starting Material	Page:	12/12
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SDS-ID:	CADWELD_SM_US	Version number:	US-EN/3.1

SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 2, 3, 4, 7, 13, 14, 15, 16.

Abbreviations and acronyms PBT = Persistent, Bioaccumulative and Toxic.
used in the safety data sheet: vPvB = very Persistent and very Bioaccumulative.

Wording of H-statements:

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Product: Carbon Dioxide	SDS No. P-4574-L May 2015
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1. Identification


Product Identifier: Carbon Dioxide	Trade Names: Carbon Dioxide, Medipure® Carbon Dioxide
Recommended Uses: Industrial: analytical, lasers; semiconductor process gas; supercritical fluid extraction	
Restrictions on Use: Use only as directed.	
Supplier: Praxair, Inc., 39 Old Ridgebury Road Danbury, CT 06810-5113 USA	
Emergency Telephone Numbers: *	
Onsite emergencies: 1-800-645-4633 CHEMTREC: USA: 1-800-424-9300 International: 001-703-527-3887, Contract: 17729	

* Call emergency numbers only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-772-9247.

2. Hazards Identification

EMERGENCY OVERVIEW

WARNING! Liquefied gas under pressure.



Contains gas and liquid under pressure; may explode if heated.
Can cause rapid suffocation.
May cause dizziness and drowsiness.
Can increase respiration and heart rate.
May cause nervous system damage.
May cause frostbite.

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communications Standard (29 CFR 1910.1200).

Hazard Classification: Gases Under Pressure – Liquefied Gas

Precautionary Statements: Protect from sunlight. Store in a well-ventilated place.

← A vertical line in the left margin indicates revised or new material.
This is a general revision; please read entire document.

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3. Composition/Information on Ingredients

This section covers materials of manufacture only. See sections 5, 8, 10, 11, and 16 for information on by-products generated during use in welding and cutting or as a result of exposure to fire.

See section 16 for important information about mixtures.

Chemical Name	Common Name and Synonyms	CAS NUMBER	CONCENTRATION
Carbon Dioxide	Carbonic anhydride, carbonic acid gas, refrigerant gas R744	124-38-9	>99%

* The symbol > means "greater than."

4. First Aid Measures

INHALATION: Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

SKIN CONTACT: For exposure to cold vapor or solid carbon dioxide (dry ice), immediately warm frostbite area with warm water not to exceed 105°F (41°C). In case of massive exposure, remove contaminated clothing while showering with warm water. Call a physician.

EYE CONTACT: For exposure to cold vapor or solid carbon dioxide (dry ice), immediately flush eyes thoroughly with warm water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. See a physician, preferably an ophthalmologist, immediately.

SWALLOWING: An unlikely route of exposure. This product is a gas at normal temperature and pressure.

NOTES TO PHYSICIAN: Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

FLAMMABLE PROPERTIES: Nonflammable

Protective Equipment and Precautions for Firefighters: Firefighters should wear personal protective equipment and fire-fighting turnout gear as appropriate for surrounding fire.

SUITABLE EXTINGUISHING MEDIA: Carbon dioxide cannot catch fire but cylinders exposed to fire may explode. Use media appropriate for surrounding fire.

PRODUCTS OF COMBUSTION: Not applicable.

PROTECTION OF FIREFIGHTERS: WARNING! High-pressure liquid and gas. Evacuate all personnel from danger area. Immediately deluge cylinders with water from maximum distance until cool; then move them away from fire area if without risk. Self-contained breathing apparatus may be required by rescue workers. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.

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Specific Physical and Chemical Hazards: Heat of fire can build pressure in cylinder and cause it to rupture. No part of cylinder should be subjected to a temperature higher than 125°F (52°C). Carbon dioxide cylinders are typically equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.)

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

WARNING! High-pressure liquid and gas. Rapid release of gaseous carbon dioxide through a pressure relief device (PRD) or valve can result in the formation of dry ice, which is very cold and can cause frostbite.

PERSONAL PRECAUTIONS: Carbon dioxide is an asphyxiant. Lack of oxygen can kill. Use self-contained breathing apparatus where needed. See Section 11.

PERSONAL PROTECTIVE EQUIPMENT (PPE): See Section 8, Exposure Control/Personal Protection.

EMERGENCY PROCEDURES: Evacuate all personnel from danger area. Shut off leak if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing reentry.

Methods and Materials for Containment and Cleaning Up: Prevent waste from contaminating the surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

7. Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING: Protect from sunlight.

Avoid breathing gas. Do not get liquid in eyes, on skin, or clothing. **Protect cylinders from damage.** Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. **Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings;** doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. **Open valve slowly.** If valve is hard to open, discontinue use and contact your supplier. Keep cylinder upright when in use. **Never apply flame or localized heat directly to any part of the cylinder.** High temperatures may damage the cylinder and could cause the pressure relief device to fail prematurely, venting the cylinder contents. For other precautions in using carbon dioxide, see section 16.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a well-ventilated place.

Gas can cause rapid suffocation due to oxygen deficiency. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Carbon dioxide is heavier than air. It tends to accumulate near the floor of an enclosed space, displacing air and pushing it upward. This creates an oxygen-deficient atmosphere near the floor or in pits and trenches. Ventilate space before entry. Verify sufficient oxygen concentration. Close cylinder valve after each use; keep closed even when empty. **Prevent reverse flow.** Reverse flow into

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cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. **Do not strike an arc on the cylinder.** The defect produced by an arc burn could lead to cylinder rupture. Do not ground the cylinder or allow it to become part of an electrical circuit. **Firmly secure cylinders upright to keep them from falling or being knocked over.** Screw valve protection cap firmly in place by hand. **Store full and empty cylinders separately.** Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.

RECOMMENDED PUBLICATIONS: For further information on storage, handling, and use, see Praxair publications P-14-153, *Guidelines for Handling Gas Cylinders and Containers*; P-15-073, *Safety Precautions for Carbon Dioxide*; and P-3499, *Safety Precautions and Emergency Response Planning*. Obtain from your local supplier.

8. Exposure Controls/Personal Protection

See section 16 for important information on by-products generated during use in welding and cutting.

COMPONENT	OSHA PEL	ACGIH TLV (2012)
Carbon dioxide	5,000 ppm	5,000 ppm TWA, 30,000 ppm 15-min STEL

IDLH = 40,000 ppm.

ENGINEERING CONTROLS:

Local Exhaust. Use a local exhaust system, if necessary, to keep the concentration of carbon dioxide below all applicable exposure limits in the worker's breathing zone.

Mechanical (General). Under certain conditions, general exhaust ventilation may be acceptable to keep carbon dioxide below the exposure limits.

Special. WARNING: Concentration levels of carbon dioxide about 1 percent are dangerous—see Section 11. Praxair recommends continuous monitoring with alarms to indicate unsafe conditions before and during potential personnel exposure. Use appropriate monitoring devices to ensure a safe oxygen level (minimum of 19.5 percent) and a safe carbon dioxide level.

Other. None

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Skin Protection. Wear insulated neoprene gloves for cylinder handling; welding gloves for welding. Metatarsal shoes for cylinder handling. Select in accordance with OSHA 29 CFR 1910.132, 1910.136, and 1910.138. See section 16 for requirements when using carbon dioxide or carbon dioxide mixtures in welding and cutting.

Eye/Face Protection. Select in accordance with OSHA 29 CFR 1910.133. See section 16 for requirements when using carbon dioxide or carbon dioxide mixtures in welding and cutting.

Respiratory Protection. None required under normal use. An air-supplied respirator must be used in confined spaces. Respiratory protection must conform to OSHA rules as specified in 29 CFR 1910.134. Select per OSHA 29 CFR 1910.134 and ANSI Z88.2.

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9. Physical and Chemical Properties

APPEARANCE:	Colorless gas	
ODOR:	Odorless. It is felt by some to have a slight, pungent odor and biting taste.	
ODOR THRESHOLD:	Not applicable.	
PHYSICAL STATE:	Gas at normal temperature and pressure	
pH:	3.7 (for carbonic acid).	
MELTING POINT/FREEZING POINT at 1 atm:	Sublimation Point -109.3°F (-78.5°C)	
INITIAL BOILING POINT at 1 atm:	Sublimation Point -109.3°F (-78.5°C)	
BOILING RANGE at 1 atm:	Not applicable.	
FLASH POINT (test method):	Not applicable.	
EVAPORATION RATE (Butyl Acetate = 1):	High	
FLAMMABILITY:	Nonflammable	
FLAMMABLE LIMITS IN AIR , % by volume:	LOWER: N/A *	UPPER: N/A *
VAPOR PRESSURE at 68°F (20°C):	838 psig (5778 kPa)	
VAPOR DENSITY at 70°F (21.1°C) and 1 atm:	Liquid Density (saturated) 47.6 lb/ft ³ (762 kg/m ³)	
RELATIVE DENSITY/SPECIFIC GRAVITY (H ₂ O = 1) at 19.4°F (-7°C):	1.22	
RELATIVE DENSITY/SPECIFIC GRAVITY (Air = 1) at 70°F (21.1°C) and 1 atm:	1.52	
SOLUBILITY IN WATER , % by wt:	0.90	
PARTITION COEFFICIENT: n-octanol/water:	Not available.	
AUTOIGNITION TEMPERATURE:	Not applicable.	
DECOMPOSITION TEMPERATURE:	Not available.	
PERCENT VOLATILES BY VOLUME:	100	
VISCOSITY:	Not applicable.	
MOLECULAR WEIGHT:	44.01.	
MOLECULAR FORMULA:	CO ₂	

* N/A – Not applicable

10. Stability and Reactivity Information

REACTIVITY: Reactive Non-Reactive

CHEMICAL STABILITY: Unstable Stable

POSSIBILITY OF HAZARDOUS REACTIONS: May Occur Will Not Occur

Decomposition into toxic, flammable, and/or oxidizing materials under above-stated conditions.

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CONDITIONS TO AVOID: Contact with incompatible materials, exposure to electrical discharges, and/or high temperatures as stated below.

INCOMPATIBLE MATERIALS: Alkali metals, alkaline earth metals, metal acetylides, chromium, titanium above 1022°F (550°C), uranium above 1382°F (750°C), magnesium above 1427°F (775°C)

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and oxygen may result from the decomposition of carbon dioxide exposed to electrical discharges and high temperatures.

11. Toxicological Information

POTENTIAL HEALTH EFFECTS:

Effects of a Single (Acute) Overexposure

Inhalation: Carbon dioxide gas is an asphyxiant with effects due to lack of oxygen. It is also physiologically active, affecting circulation and breathing. Moderate concentrations may cause headache, drowsiness, dizziness, stinging of the nose and throat, excitation, rapid breathing and heart rate, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.

Carbon dioxide is an asphyxiant. It initially stimulates respiration and then causes respiratory depression. High concentrations result in narcosis. Symptoms in humans are as follows:

Carbon Dioxide Concentration Inhaled	EFFECTS
1%	Breathing rate increases slightly.
2%	Breathing rate increases to 50% above normal level. Prolonged exposure can cause headache, tiredness.
3%	Breathing increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increased blood pressure and pulse rate.
4–5%	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident, and slight choking may be felt.
5–10%	Characteristic sharp odor noticeable. Very labored breathing, visual impairment, headache, and ringing in the ears. Judgment may be impaired, followed within minutes by loss of consciousness.
10–100%	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation.

The welding process may generate hazardous fumes/gases. (See sections 10 and 16.)

Skin Contact. No harm expected from vapor. Cold gas, or liquid or solid carbon dioxide may cause severe frostbite.

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Swallowing. An unlikely route of exposure. This product is a gas at normal temperature and pressure.

Eye Contact: No harm expected from vapor. Cold gas, or liquid or solid carbon dioxide may cause severe frostbite.

Effects of Repeated (Chronic) Overexposure: No harm expected.

Other Effects of Overexposure: Damage to retinal or ganglion cells and central nervous system may occur.

Medical Conditions Aggravated by Overexposure: The toxicology and the physical and chemical properties of carbon dioxide suggest that overexposure is unlikely to aggravate existing medical conditions.

ACUTE DOSE EFFECTS: LC_{Lo} = 90,000 ppm, 5 min., human

REPRODUCTIVE EFFECTS: A single study has shown an increase in heart defects in rats exposed to 6% carbon dioxide in air for 24 hours at different times during gestation. There is no evidence that carbon dioxide is teratogenic in humans.

CARCINOGENICITY: Carbon dioxide is not listed by NTP, OSHA, or IARC.

12. Ecological Information

ECOTOXICITY: No known effects.

PERSISTENCE AND DEGRADABILITY: Not applicable.

BIOACCUMULATIVE POTENTIAL: Not applicable.

MOBILITY IN SOIL: Not applicable.

OTHER ADVERSE EFFECTS: No adverse ecological effects expected. The components of this mixture do not contain any Class I or Class II ozone-depleting chemicals.

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

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14. Transport Information

UN NUMBER: UN1013	PROPER SHIPPING NAME: Carbon Dioxide		
HAZARD CLASS(ES): 2.2	PACKING GROUP NA *	PRODUCT RQ: None	
ENVIRONMENTAL HAZARDS: Not listed as a marine pollutant.			
SPECIAL SHIPPING INFORMATION:	<ul style="list-style-type: none"> • Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, non-ventilated compartment of a vehicle can present serious safety hazards. • Shipment of compressed gas cylinders that have been filled without the owner's consent is a violation of federal law [49 CFR 173.301(e)]. 		
SHIPPING LABEL(s):	NONFLAMMABLE GAS		
PLACARD (when required):	NONFLAMMABLE GAS		

*NA = Not applicable.

15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

U.S. FEDERAL REGULATIONS:

EPA (ENVIRONMENTAL PROTECTION AGENCY)

CERCLA: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (40 CFR Parts 117 and 302):

Reportable Quantity (RQ): None

SARA: SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:

SECTIONS 302/304: Require emergency planning based on Threshold Planning Quantity (TPQ) and release reporting based on Reportable Quantities (RQ) of Extremely Hazardous Substances (EHS) (40 CFR Part 355):

TPQ: None

EHS RQ (40 CFR 355): None

SECTIONS 311/312: Require submission of SDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

IMMEDIATE: Yes

DELAYED: No

PRESSURE: Yes

REACTIVITY: No

FIRE: No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Carbon dioxide is not subject to reporting under Section 313.

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40 CFR 68: RISK MANAGEMENT PROGRAM FOR CHEMICAL ACCIDENTAL RELEASE PREVENTION: Requires development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

Carbon dioxide is not listed as a regulated substance.

TSCA: TOXIC SUBSTANCES CONTROL ACT: Carbon dioxide is listed on the TSCA inventory.

OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119: PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

Carbon dioxide is not listed in Appendix A as a highly hazardous chemical.

STATE REGULATIONS:

CALIFORNIA: Carbon dioxide is not listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 65).

PENNSYLVANIA: Carbon dioxide is subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

16. Other Information

Be sure to read and understand all labels and instructions supplied with all containers of this product.

ADDITIONAL SAFETY AND HEALTH HAZARDS: Using carbon dioxide or mixtures containing carbon dioxide in welding and cutting may create additional hazards.

Read and understand the manufacturer's instructions and the precautionary labels on the products used in welding and cutting. Ask your welding products supplier for a copy of Praxair's free safety booklets, P-2035, *Precautions and Safe Practices for Gas Welding, Cutting, and Heating*, and P-52-529, *Precautions and Safe Practices for Electric Welding and Cutting*, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, *Safety in Welding and Cutting and Allied Processes*, published by the American Welding Society (AWS), 8669 Doral Blvd., #130, Doral, FL 33166, <http://www.aws.org>.

FUMES AND GASES can be dangerous to your health and may cause serious lung disease.

- **Keep your head out of fumes. Do not breathe fumes and gases. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness; nausea; and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort.**

Fumes and gases cannot be classified simply. The amount and type depend on the metal being worked and the process, procedure, equipment, and supplies used. Possible dangerous materials may be found in fluxes, electrodes, and other materials. Get an SDS for every material you use.

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Contaminants in the air may add to the hazard of fumes and gases. One such contaminant, chlorinated hydrocarbon vapors from cleaning and degreasing activities, poses a special risk.

- **Do not use electric arcs in the presence of chlorinated hydrocarbon vapors—highly toxic phosgene may be produced.**

Metal coatings such as paint, plating, or galvanizing may generate harmful fumes when heated. Residues from cleaning materials may also be harmful.

- **Avoid arc operations on parts with phosphate residues (anti-rust, cleaning preparations)—highly toxic phosphine may be produced.**

To find the quantity and content of fumes and gases, you can take air samples. By analyzing these samples, you can find out what respiratory protection you need. One recommended sampling method is to take air from inside the worker's helmet or from the worker's breathing zone. See AWS F1.1, *Method for Sampling Airborne Particulates Generated by Welding and Allied Processes*, available from the American Welding Society, 8669 Doral Blvd., #130, Doral, FL 33166, <http://www.aws.org>.

NOTES TO PHYSICIAN:

Acute: *Gases, fumes, and dusts may cause irritation to the eyes, lungs, nose, and throat. Some toxic gases associated with welding and related processes may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty breathing, frequent coughing, or chest pains.*

Chronic: *Protracted inhalation of air contaminants may lead to their accumulation in the lungs, a condition that may be seen as dense areas on chest x-rays. The severity of change is proportional to the length of exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on x-rays may be caused by non-work-related factors such as smoking, etc.*

PROTECTIVE CLOTHING AND EQUIPMENT FOR WELDING OPERATIONS:

PROTECTIVE GLOVES: Wear welding gloves.

EYE PROTECTION: Wear a helmet or use a face shield with a filter lens. Select lens per ANSI Z49.1. Provide protective screens and flash goggles if needed to protect others; select per OSHA 29 CFR 1910.133.

OTHER PROTECTIVE EQUIPMENT: Wear hand, head, and body protection. (See ANSI Z49.1.) Worn as needed, these help prevent injury from radiation, sparks, and electrical shock. Minimum protection includes welder's gloves and a face shield. For added protection consider arm protectors, aprons, hats, shoulder protection, and dark, substantial clothing.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE: **High-pressure liquid and gas.** Use piping and equipment adequately designed to withstand pressures to be encountered. **Prevent reverse flow.** Reverse flow into cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. **Do not strike an arc on the cylinder.** The defect produced by an arc burn could lead to cylinder rupture. **Never work on a pressurized system.** If there is a leak, close the cylinder valve. Blow the system down in a safe and environmentally sound manner in compliance with all federal, state, and local laws; then repair the leak. **Never place a compressed gas cylinder where it may**

Product: Carbon Dioxide

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May 2015

become part of an electrical circuit. When using compressed gases in and around electric welding applications, never ground the cylinders. Grounding exposes the cylinders to damage by the electric welding arc.

Mixtures. When you mix two or more gases or liquefied gases, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, gases and liquids have properties that can cause serious injury or death.

HAZARD RATING SYSTEMS:

NFPA RATINGS:

HEALTH = 2
FLAMMABILITY = 0
INSTABILITY = 0
SPECIAL = SA (CGA recommends this to designate Simple Asphyxiant.)

HMIS RATINGS:

HEALTH = 1
FLAMMABILITY = 0
PHYSICAL HAZARD = 3

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

THREADED: CGA-320
PIN-INDEXED YOKE: CGA-940 (medical use)
ULTRA-HIGH-INTEGRITY CONNECTION: CGA-716

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlet V-1 listed below.

Ask your supplier about free Praxair safety literature as referred to in this SDS and on the label for this product. Further information can be found in the following materials published by the Compressed Gas Association, Inc. (CGA), <http://www.cganet.com>.

AV-1 *Safe Handling and Storage of Compressed Gases*
AV-7 *Characteristics and Safe Handling of Carbon Dioxide*
G-6 *Carbon Dioxide*
G-6.1 *Standard for Low Pressure Carbon Dioxide Systems at Customer Sites*
G-6.2 *Commodity Specification for Carbon Dioxide*
P-1 *Safe Handling of Compressed Gases in Containers*
SB-2 *Oxygen-Deficient Atmospheres*
V-1 *Compressed Gas Cylinder Valve Inlet and Outlet Connections*
— *Handbook of Compressed Gases*

Last revised 9 May 2015.

Praxair Safety Data Sheet

Product: Carbon Dioxide

SDS No. P-4574-L
May 2015

Praxair asks users of this product to study this SDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative or local distributor or supplier. If you have questions regarding Praxair SDSs, would like the form number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (**Phone:** 1-800-PRAXAIR; **Address:** Praxair Call Center, Praxair, Inc., PO Box 44, Tonawanda, NY 14151-0044).

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Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113

Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1980 Revision date: 08/26/2015 Supersedes: 04/26/2015

SECTION: 1. Product and company identification

1.1. Product identifier

Product form : Mixture
Formula : Mixture of Argon, Helium, and Oxygen
Other means of identification : Helistar Shielding Gas Mixtures

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Electric Arc Welding
Industrial use

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
(collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US classification

Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) :

WARNING

Hazard statements (GHS-US) :

H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood
P271+P403 - Use and store only outdoors or in a well-ventilated place.
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG10 - Use only with equipment rated for cylinder pressure.
CGA-PG06 - Close valve after each use and when empty.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

2.3. Other hazards

Other hazards not contributing to the classification :

Asphyxiant in high concentrations.

Welding-specific: For unique hazards specific to welding, see Sections 8.2, 10.6, and 16.

2.4. Unknown acute toxicity (GHS US)

No data available



Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

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SECTION 3: Composition/Information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Argon	(CAS No) 7440-37-1	1 - 99
Helium	(CAS No) 7440-59-7	1 - 99
Oxygen	(CAS No) 7782-44-7	0.0001 - 1

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Adverse effects not expected from this product. In case of eye irritation: Immediately flush eyes thoroughly with water for at least 15 minutes. Consult an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

- Reactivity : None.

5.3. Advice for firefighters

- Firefighting instructions : **WARNING: High pressure gas**
Compressed gas: asphyxiant
Suffocation hazard by lack of oxygen
Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Other information : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : **WARNING: High-pressure gas.** Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Remove all sources of ignition, if safe to do so. Reduce gas with fog or fine water spray. Stop flow of product if safe to do so. Ventilate area or move container to a well-ventilated area. Before entering the area, especially a confined area, test for sufficient oxygen.



Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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Date of issue: 01/01/1980 Revision date: 08/26/2015 Supersedes: 04/26/2015

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Try to stop release.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Argon (7440-37-1)	
ACGIH	Not established
USA OSHA	Not established
Helium (7440-59-7)	
ACGIH	Not established
USA OSHA	Not established



Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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Oxygen (7782-44-7)

ACGIH	Not established
USA OSHA	Not established

8.2. Exposure controls

- Appropriate engineering controls : Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.
- Hand protection : Wear work gloves when handling containers; welding gloves for welding. Gloves must be free of oil and grease.
- Eye protection : Wear safety glasses with side shields.
- Skin and body protection : Wear work gloves and metatarsal shoes for cylinder handling. Protective equipment where needed. Select in accordance with OSHA 29 CFR 1910.132, 1910.136, and 1910.138.
- As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.
- Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
- Thermal hazard protection : None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Gas
- Color : Colorless
- Odor : No data available
- Odor threshold : No data available
- pH : Not applicable.
- Relative evaporation rate (butyl acetate=1) : No data available
- Relative evaporation rate (ether=1) : Not applicable.
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : Not applicable.
- Relative vapor density at 20 °C : No data available
- Relative density : No data available
- Solubility : Water: No data available
- Log Pow : Not applicable.
- Log Kow : Not applicable.
- Viscosity, kinematic : Not applicable.



Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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Date of issue: 01/01/1980 Revision date: 08/26/2015 Supersedes: 04/26/2015

Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Using this product in welding and cutting may create additional hazards. The arc from electric arc welding may form gaseous reaction products such as carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Other decomposition products of arc welding and cutting originate from the volatilization, reaction, and oxidization of the material being worked.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: No ecological damage caused by this product.
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Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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Date of issue: 01/01/1980 Revision date: 08/26/2015 Supersedes: 04/26/2015

12.2. Persistence and degradability

Helistar Shielding Gas Mixtures	
Persistence and degradability	No ecological damage caused by this product.
Argon (7440-37-1)	
Persistence and degradability	No ecological damage caused by this product.
Helium (7440-59-7)	
Persistence and degradability	No ecological damage caused by this product.
Oxygen (7782-44-7)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

Helistar Shielding Gas Mixtures	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Argon (7440-37-1)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Helium (7440-59-7)	
Log Pow	Not applicable for inorganic gases.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Oxygen (7782-44-7)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Helistar Shielding Gas Mixtures	
Mobility in soil	No data available.
Argon (7440-37-1)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
Helium (7440-59-7)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
Oxygen (7782-44-7)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer : None.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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SECTION 14: Transport information

In accordance with DOT

Transport document description	: UN1956 Compressed gas, n.o.s., 2.2
UN-No.(DOT)	: UN1956
Proper Shipping Name (DOT)	: Compressed gas, n.o.s.
Transport hazard class(es) (DOT)	: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
Hazard labels (DOT)	: 2.2 - Non-flammable gas



DOT Symbols : G - Identifies proper shipping name (PSN) requiring the addition of technical name(s) in parentheses following the PSN.

Additional information

Other information	: No supplementary information available.
Special transport precautions	: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG)	: 1956
Proper Shipping Name (IMDG)	: COMPRESSED GAS, N.O.S.
Class (IMDG)	: 2 - Gases

Air transport

UN-No. (IATA)	: 1956
Proper Shipping Name (IATA)	: Compressed gas, n.o.s.
Class (IATA)	: 2

SECTION 15: Regulatory information

15.1. US Federal regulations

Helistar Shielding Gas Mixtures

SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard
-------------------------------------	-----------------------------------

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Argon (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

Helium (7440-59-7)

Listed on the Canadian DSL (Domestic Substances List)



Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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Helium (7440-59-7)

Oxygen (7782-44-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

15.2.2. National regulations

No additional information available

15.3. US State regulations

Helistar Shielding Gas Mixtures()

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Argon (7440-37-1)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Helium (7440-59-7)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Oxygen (7782-44-7)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Argon (7440-37-1)

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Helium (7440-59-7)

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Oxygen (7782-44-7)

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

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Date of issue: 01/01/1980 Revision date: 08/26/2015 Supersedes: 04/26/2015

SECTION 16: Other information

Other information

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

WHEN USED FOR WELDING Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort.

Contaminants in the air may add to the hazard of fumes and gases. One such contaminant, chlorinated hydrocarbon vapors from cleaning and degreasing activities, poses a special risk. **DO NOT USE ELECTRIC ARCS IN THE PRESENCE OF CHLORINATED HYDROCARBON VAPORS—HIGHLY TOXIC PHOSGENE MAY BE PRODUCED.** Metal coatings such as paint, plating, or galvanizing may generate harmful fumes when heated. Residues from cleaning materials may also be harmful. **AVOID ARC OPERATIONS ON PARTS WITH PHOSPHATE RESIDUES (ANTI-RUST, CLEANING PREPARATIONS)—HIGHLY TOXIC PHOSPHINE MAY BE PRODUCED.**

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

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Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc., P.O. Box 44, Tonawanda, NY 14151-0044).

PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

NFPA health hazard

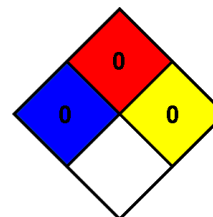
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.





Gas Mixture (1-99% Argon, 1-99% Helium, 1 ppm-1% Oxygen)

Safety Data Sheet P-6300

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1980 Revision date: 08/26/2015 Supersedes: 04/26/2015

HMIS III Rating

Health : 0 Minimal Hazard - No significant risk to health
Flammability : 0 Minimal Hazard
Physical : 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

CRC 2085 Zinc It 350g Aerosol (NZ)

CRC Industries (CRC Industries New Zealand)

Chemwatch Hazard Alert Code: 4

Chemwatch: 17012

Issue Date: 14/11/2013

Version No: 7.1.1.1

Print Date: 02/10/2015

Safety Data Sheet according to HSNO Regulations

Initial Date: **Not Available**

S.GHS.NZL.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	CRC 2085 Zinc It 350g Aerosol (NZ)
Synonyms	Product Code: 2082
Proper shipping name	AEROSOLS
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Application is by spray atomisation from a hand held aerosol pack Anti corrosive interior / exterior zinc spray coating for metal protection.
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Details of the supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	customerservices@crc.co.nz

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	+64 9 278-7913
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Classified as Dangerous Goods for transport purposes.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	4	
Toxicity	2	
Body Contact	2	
Reactivity	1	
Chronic	2	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

GHS Classification [1]	Flammable Aerosol Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Carcinogen Category 2, Reproductive Toxicity Category 2, STOT - SE Category 2, STOT - RE Category 2, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	2.1.2A, 6.1D(dermal), 6.1D(inhalation), 6.1D(oral), 6.3A, 6.4A, 6.7B, 6.8B, 6.9B, 9.1A

Label elements

GHS label elements	
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SIGNAL WORD **DANGER**

Hazard statement(s)

H222	Extremely flammable aerosol
H302	Harmful if swallowed
H312	Harmful in contact with skin
H332	Harmful if inhaled
H315	Causes skin irritation
H319	Causes serious eye irritation
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H371	May cause damage to organs
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider
P337+P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.

Precautionary statement(s) Storage

P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7440-66-6	20-40	<u>zinc powder</u>
108-88-3	5-20	<u>toluene</u>
1330-20-7	5-20	<u>xylene</u>
6422-86-2	<1	<u>dioctyl terephthalate</u>
Not Available	1-9	additives, unregulated
		propellant as
68476-85-7.	10-30	<u>LPG (liquefied petroleum gas)</u>

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST AID MEASURES

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Description of first aid measures

Eye Contact	<p>If aerosols come in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.
Inhalation	<p>If aerosols, fumes or combustion products are inhaled:</p> <ul style="list-style-type: none"> ▶ Remove to fresh air. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	<ul style="list-style-type: none"> ▶ Avoid giving milk or oils. ▶ Avoid giving alcohol. <p>Not considered a normal route of entry.</p>

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Following acute or short term repeated exposures to toluene:

- ▶ Toluene is absorbed across the alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37 degrees C.) The concentration of toluene, in expired breath, is of the order of 18 ppm following sustained exposure to 100 ppm. The tissue/blood proportion is 1/3 except in adipose where the proportion is 8/10.
- ▶ Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid. This may be detected in the urine in amounts between 0.5 and 2.5 g/24 hr which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.
- ▶ Primary threat to life from ingestion and/or inhalation is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (eg cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ <50 mm Hg or pCO₂ > 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial damage has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenaline) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- ▶ Lavage is indicated in patients who require decontamination; ensure use.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
o-Cresol in urine	0.5 mg/L	End of shift	B
Hippuric acid in urine	1.6 g/g creatinine	End of shift	B, NS
Toluene in blood	0.05 mg/L	Prior to last shift of workweek	

NS: Non-specific determinant; also observed after exposure to other material

B: Background levels occur in specimens collected from subjects NOT exposed

For acute or short term repeated exposures to xylene:

- ▶ Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- ▶ Pulmonary absorption is rapid with about 60-65% retained at rest.
- ▶ Primary threat to life from ingestion and/or inhalation, is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ < 50 mm Hg or pCO₂ > 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Methylhippu-ric acids in urine	1.5 gm/gm creatinine 2 mg/min	End of shift Last 4 hrs of shift	
<ul style="list-style-type: none"> ▶ Absorption of zinc compounds occurs in the small intestine. ▶ The metal is heavily protein bound. ▶ Elimination results primarily from faecal excretion. ▶ The usual measures for decontamination (Ipecac Syrup, lavage, charcoal or cathartics) may be administered, although patients usually have sufficient vomiting not to require them. ▶ CaNa2EDTA has been used successfully to normalise zinc levels and is the agent of choice. 			

[Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	<p>SMALL FIRE:</p> <ul style="list-style-type: none"> ▶ Water spray, dry chemical or CO2 <p>LARGE FIRE:</p> <ul style="list-style-type: none"> ▶ Water spray or fog.
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Special hazards arising from the substrate or mixture

Fire Incompatibility	<ul style="list-style-type: none"> ▶ Reacts with acids producing flammable / explosive hydrogen (H2) gas ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Liquid and vapour are highly flammable. ▶ Severe fire hazard when exposed to heat or flame. ▶ Vapour forms an explosive mixture with air. ▶ Severe explosion hazard, in the form of vapour, when exposed to flame or spark.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Wear protective clothing, impervious gloves and safety glasses. ▶ Shut off all possible sources of ignition and increase ventilation.
Major Spills	<ul style="list-style-type: none"> ▶ Remove leaking cylinders to a safe place if possible. ▶ Release pressure under safe, controlled conditions by opening the valve. ▶ DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve. ▶ Clear area of personnel and move upwind.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	<ul style="list-style-type: none"> ▶ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can ▶ Store in original containers in approved flammable liquid storage area. ▶ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▶ No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ CARE: Packing of high density product in light weight metal or plastic packages may result in container collapse with product release ▶ Heavy gauge metal packages / Heavy gauge metal drums ▶ Aerosol dispenser.
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	<ul style="list-style-type: none"> ▶ Check that containers are clearly labelled.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	zinc powder	Particulates not otherwise classified	10 Inhalable dust; 3 Respirable dust mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	toluene	Toluene	188 mg/m3 / 50 ppm	Not Available	Not Available	Skin absorption
New Zealand Workplace Exposure Standards (WES)	xylene	Xylene (o-, m-, p-isomers)	217 mg/m3 / 50 ppm	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	dioctyl terephthalate	Particulates not otherwise classified	10 Inhalable dust; 3 Respirable dust mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	LPG (liquefied petroleum gas)	LPG (Liquefied petroleum gas)	1800 mg/m3 / 1000 ppm	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
zinc powder	Zinc	1.9 mg/m3	21 mg/m3	120 mg/m3
toluene	Toluene	Not Available	Not Available	Not Available
xylene	Xylenes	Not Available	Not Available	Not Available
dioctyl terephthalate	Particulate material (PNOS)	30 mg/m3	330 mg/m3	2000 mg/m3
LPG (liquefied petroleum gas)	Liquified petroleum gas; (L.P.G.)	3,000 ppm	3200 ppm	19000 ppm

Ingredient	Original IDLH	Revised IDLH
zinc powder	Not Available	Not Available
toluene	2,000 ppm	500 ppm
xylene	1,000 ppm	900 ppm
dioctyl terephthalate	Not Available	Not Available
additives, unregulated	Not Available	Not Available
LPG (liquefied petroleum gas)	19,000 [LEL] ppm	2,000 [LEL] ppm

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ No special equipment needed when handling small quantities. ▶ OTHERWISE: ▶ For potentially moderate exposures:

	<ul style="list-style-type: none"> ▶ Wear general protective gloves, eg. light weight rubber gloves. ▶ For potentially heavy exposures: ▶ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: <ul style="list-style-type: none"> ▶ Overalls. ▶ Skin cleansing cream. ▶ Eyewash unit.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

CRC 2085 Zinc It 350g Aerosol (NZ)

Material	CPI
BUTYL	C
BUTYL/NEOPRENE	C
CPE	C
HYPALON	C
NAT+NEOPR+NITRILE	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE/EVAL/PE	C
PVA	C
PVC	C
PVDC/PE/PVDC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/CHLOROBUTYL	C
VITON/NEOPRENE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AX-AUS / Class 1	-	AX-PAPR-AUS / Class 1
up to 50 x ES	Air-line*	-	-
up to 100 x ES	-	AX-3	-
100+ x ES	-	Air-line**	-

* - Continuous-flow; ** - Continuous-flow or positive pressure demand
 A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Supplied as an aerosol pack. Contents under PRESSURE . Contains highly flammable hydrocarbon propellant. 22aereth Grey viscous liquid with a solvent odour; not miscible with water.		
Physical state	Liquid	Relative density (Water = 1)	2.1
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available

pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	110	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	-81 Propellant	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	UNDER PRESSURE	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Elevated temperatures. ▶ Presence of open flame. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	<p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>There is some evidence to suggest that the material can cause respiratory irritation in some persons.</p>
Ingestion	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)</p> <p>Not normally a hazard due to physical form of product.</p> <p>Considered an unlikely route of entry in commercial/industrial environments</p>
Skin Contact	<p>Skin contact with the material may be harmful; systemic effects may result following absorption.</p> <p>The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time.</p> <p>Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p> <p>Spray mist may produce discomfort</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p>
Eye	<p>If applied to the eyes, this material causes severe eye damage. Not considered to be a risk because of the extreme volatility of the gas.</p>
Chronic	<p>There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.</p> <p>Harmful: danger of serious damage to health by prolonged exposure through inhalation.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p>

CRC 2085 Zinc It 350g Aerosol (NZ)	TOXICITY	IRRITATION
	Not Available	Not Available
zinc powder	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 1130 mg/kg ^[2]	Skin (human):0.3mg/3DaysInt. mild

	Oral (rat) LD50: >2000 mg/kg ^[1]	
toluene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 12124 mg/kg ^[2]	Eye (rabbit): 2mg/24h - SEVERE
	Inhalation (rat) LC50: >26700 ppm/1hd ^[2]	Eye (rabbit):0.87 mg - mild
	Inhalation (rat) LC50: 49 mg/L/4H ^[2]	Eye (rabbit):100 mg/30sec - mild
	Oral (rat) LD50: 636 mg/kg ^[2]	Skin (rabbit):20 mg/24h-moderate Skin (rabbit):500 mg - moderate
xylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1700 mg/kg ^[2]	Eye (human): 200 ppm irritant
	Inhalation (rat) LC50: 5000 ppm/4h ^[2]	Eye (rabbit): 5 mg/24h SEVERE
	Oral (rat) LD50: 4300 mg/kg ^[2]	Eye (rabbit): 87 mg mild Skin (rabbit):500 mg/24h moderate
dioctyl terephthalate	TOXICITY	IRRITATION
	dermal (guinea pig) LD50: >19.68 mg/kg ^[2]	[Eastman]
	Oral (rat) LD50: >3200 mg/kg ^[1] Oral (rat) LD50: >5000 mg/kg ^[2]	Eye (rabbit): slight Skin (g. pig): slight
LPG (liquefied petroleum gas)	TOXICITY	IRRITATION
	Inhalation (mouse) LC50: >15.6<17.9 mm/l2 h mm/l2="> ^[1]	Not Available
	Inhalation (mouse) LC50: >15.6<17.9 mm/l2 h mm/l2="> ^[1]	
	Inhalation (mouse) LC50: 410000 ppm2 h ^[1]	
	Inhalation (mouse) LC50: 410000 ppm2 h ^[1]	
	Inhalation (rat) LC50: >800000 ppm15 min ^[1]	
	Inhalation (rat) LC50: >800000 ppm15 min ^[1]	
	Inhalation (rat) LC50: 1354.944 mg/L15 min ^[1]	
	Inhalation (rat) LC50: 1355 mg/l15 min ^[1]	
	Inhalation (rat) LC50: 1442.738 mg/L15 min ^[1]	
	Inhalation (rat) LC50: 1442.738 mg/L15 min ^[1]	
	Inhalation (rat) LC50: 1443 mg/l15 min ^[1]	
	Inhalation (rat) LC50: 1443 mg/l15 min ^[1]	
Inhalation (rat) LC50: 570000 ppm15 min ^[1]		
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

CRC 2085 Zinc It 350g Aerosol (NZ)	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
TOLUENE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. For toluene: Acute Toxicity Humans exposed to intermediate to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis, and death. Similar effects are observed in short-term animal studies. Humans - Toluene ingestion or inhalation can result in severe central nervous system depression, and in large doses, can act as a narcotic.
XYLENE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Reproductive effector in rats

DIOCTYL TEREPHTHALATE	The material may produce peroxisome proliferation. Peroxisomes are single, membrane limited organelles in the cytoplasm that are found in the cells of animals, plants, fungi, and protozoa. Tests reveal that terephthalic acid has low levels of toxicity when swallowed, inhaled or on skin contact. Animal testing shows that it causes mild airway irritation, and causes inflammation and stones in the bladder, with tumours appearing on chronic exposure.
LPG (LIQUEFIED PETROLEUM GAS)	No significant acute toxicological data identified in literature search. inhalation of the gas

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	⊖	STOT - Repeated Exposure	✓
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend: ✓ – Data required to make classification available
 ✗ – Data available but does not fill the criteria for classification
 ⊖ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)
xylene	HIGH (Half-life = 360 days)	LOW (Half-life = 1.83 days)
dioctyl terephthalate	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
toluene	LOW (BCF = 90)
xylene	MEDIUM (BCF = 740)
dioctyl terephthalate	LOW (LogKOW = 8.3918)

Mobility in soil

Ingredient	Mobility
toluene	LOW (KOC = 268)
dioctyl terephthalate	LOW (KOC = 162100)


SECTION 13 DISPOSAL CONSIDERATIONS


Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority.
	Ensure that the disposal of material is carried out in accordance with Hazardous Substances (Disposal) Regulations 2001.

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
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Marine Pollutant	
HAZCHEM	2YE

Land transport (UN)

UN number	1950
Packing group	Not Applicable
UN proper shipping name	AEROSOLS
Environmental hazard	No relevant data
Transport hazard class(es)	Class : 2.1 Subrisk : Not Applicable
Special precautions for user	Special provisions : 63;190;277;327;344 Limited quantity : See;SP 277

Air transport (ICAO-IATA / DGR)

UN number	1950
Packing group	Not Applicable
UN proper shipping name	Aerosols, flammable; Aerosols, flammable (engine starting fluid)
Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class : 2.1 ICAO / IATA Subrisk : Not Applicable ERG Code : 10L
Special precautions for user	Special provisions : A145A167A802; A1A145A167A802 Cargo Only Packing Instructions : 203 Cargo Only Maximum Qty / Pack : 150 kg Passenger and Cargo Packing Instructions : 203; Forbidden Passenger and Cargo Maximum Qty / Pack : 75 kg; Forbidden Passenger and Cargo Limited Quantity Packing Instructions : Y203; Forbidden Passenger and Cargo Limited Maximum Qty / Pack : 30 kg G; Forbidden

Sea transport (IMDG-Code / GGVSee)

UN number	1950
Packing group	Not Applicable
UN proper shipping name	AEROSOLS
Environmental hazard	Not Applicable
Transport hazard class(es)	IMDG Class : 2.1 IMDG Subrisk : Not Applicable
Special precautions for user	EMS Number : F-D , S-U Special provisions : 63 190 277 327 344 959 Limited Quantities : See SP277

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	toluene	Y
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid	xylene	Y

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

Not Available

HSR Number	Group Standard
------------	----------------

ZINC POWDER(7440-66-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

TOLUENE(108-88-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)
New Zealand Workplace Exposure Standards (WES)

XYLENE(1330-20-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)
New Zealand Workplace Exposure Standards (WES)

DIOCTYL TEREPHTHALATE(6422-86-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

LPG (LIQUEFIED PETROLEUM GAS)(68476-85-7.) IS FOUND ON THE FOLLOWING REGULATORY LISTS

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

Location Test Certificate

Subject to Regulation 55 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations, a location test certificate is required when quantity greater than or equal to those indicated below are present.

Hazard Class	Quantity beyond which controls apply for closed containers	Quantity beyond which controls apply when use occurring in open containers
2.1.2A	3 000 L (aggregate water capacity)	3 000 L (aggregate water capacity)

Approved Handler

Subject to Regulation 56 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations and Regulation 9 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations, the substance must be under the personal control of an Approved Handler when present in a quantity greater than or equal to those indicated below.

Class of substance	Quantities
9.1A, 9.2A, 9.3A, and 9.4A	Any quantity
2.1.2A	3 000 L aggregate water capacity

Refer Group Standards for further information

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (toluene; xylene; LPG (liquefied petroleum gas); dioctyl terephthalate; zinc powder)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (zinc powder)
Korea - KECL	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y

Legend:

Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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TEL (+61 3) 9572 4700.

SAFETY DATA SHEET

1501

Section 1. Identification

Product name : KRYLON® Interior/Exterior Paint
Glossy White (OSHA White)

Product code : 1501

Other means of identification : Not available.

Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
KRYLON PRODUCTS GROUP
Cleveland, OH 44115

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (800) 247-3266

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 28.6%

GHS label elements

Hazard pictograms :



Signal word : Danger

Date of issue/Date of revision :

6/2/2015.

Date of previous issue :

4/8/2015.

Version : 1.02

1/16

Section 2. Hazards identification

Hazard statements	: Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes serious eye irritation. Causes skin irritation. Suspected of damaging the unborn child. Suspected of causing cancer. May be fatal if swallowed and enters airways. May cause respiratory irritation. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure.
Precautionary statements	
General	: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.
Response	: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

CAS number/other identifiers

Section 3. Composition/information on ingredients

Ingredient name	% by weight	CAS number
Acetone	36.1	67-64-1
Methyl Ethyl Ketone	13.8	78-93-3
Propane	13.6	74-98-6
Xylene	7.3	1330-20-7
Butane	6.4	106-97-8
Titanium Dioxide	6.4	13463-67-7
Ethylbenzene	1.3	100-41-4
Toluene	0.2	108-88-3
Methyl Isobutyl Ketone	0.1	108-10-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Acetone	<p>ACGIH TLV (United States, 4/2014). TWA: 500 ppm 8 hours. TWA: 1188 mg/m³ 8 hours. STEL: 750 ppm 15 minutes. STEL: 1782 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 250 ppm 10 hours. TWA: 590 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 2400 mg/m³ 8 hours.</p>
Methyl Ethyl Ketone	<p>ACGIH TLV (United States, 4/2014). TWA: 200 ppm 8 hours. TWA: 590 mg/m³ 8 hours. STEL: 300 ppm 15 minutes. STEL: 885 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 200 ppm 10 hours. TWA: 590 mg/m³ 10 hours. STEL: 300 ppm 15 minutes. STEL: 885 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 200 ppm 8 hours. TWA: 590 mg/m³ 8 hours.</p>
Propane	<p>NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Xylene	<p>ACGIH TLV (United States, 4/2014). TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p>
Butane	<p>NIOSH REL (United States, 10/2013). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</p> <p>ACGIH TLV (United States, 4/2014). STEL: 1000 ppm 15 minutes.</p>
Titanium Dioxide	<p>ACGIH TLV (United States, 4/2014). TWA: 10 mg/m³ 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 15 mg/m³ 8 hours. Form: Total dust</p>
Ethylbenzene	<p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p>

Section 8. Exposure controls/personal protection

Toluene	<p>NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 435 mg/m³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p> <p>OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes.</p>
Methyl Isobutyl Ketone	<p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours. STEL: 75 ppm 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 50 ppm 10 hours. TWA: 205 mg/m³ 10 hours. STEL: 75 ppm 15 minutes. STEL: 300 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 410 mg/m³ 8 hours.</p>

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : 7
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
- Evaporation rate** : 5.6 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 13.1%
- Vapor pressure** : 13.5 kPa (101.325 mm Hg) [at 20°C]
- Vapor density** : 1.55 [Air = 1]
- Relative density** : 0.79
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (room temperature): <0.205 cm²/s (<20.5 cSt)
Kinematic (40°C (104°F)): <0.205 cm²/s (<20.5 cSt)
- Aerosol product**
- Type of aerosol** : Spray
- Heat of combustion** : 0.00002741 kJ/g

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame).
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Acetone	LD50 Oral	Rat	5800 mg/kg	-
Methyl Ethyl Ketone	LD50 Dermal	Rabbit	6480 mg/kg	-
	LD50 Oral	Rat	2737 mg/kg	-
Xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Methyl Isobutyl Ketone	LD50 Oral	Rat	2080 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Acetone	Eyes - Mild irritant	Human	-	186300 parts per million	-
	Eyes - Mild irritant	Rabbit	-	10 microliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Methyl Ethyl Ketone	Skin - Mild irritant	Rabbit	-	395 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 14 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
Titanium Dioxide	Skin - Mild irritant	Human	-	72 hours 300	-

Section 11. Toxicological information

Ethylbenzene	Eyes - Severe irritant	Rabbit	-	Micrograms Intermittent 500	-
	Skin - Mild irritant	Rabbit	-	milligrams 24 hours 15	-
Toluene	Eyes - Mild irritant	Rabbit	-	milligrams 0.5 minutes 100	-
	Eyes - Mild irritant	Rabbit	-	milligrams 870	-
	Eyes - Severe irritant	Rabbit	-	Micrograms 24 hours 2	-
	Skin - Mild irritant	Pig	-	milligrams 24 hours 250	-
	Skin - Mild irritant	Rabbit	-	microliters 435	-
	Skin - Moderate irritant	Rabbit	-	milligrams 24 hours 20	-
	Skin - Moderate irritant	Rabbit	-	milligrams 500	-
	milligrams				
Methyl Isobutyl Ketone	Eyes - Moderate irritant	Rabbit	-	24 hours 100	-
	Eyes - Severe irritant	Rabbit	-	microliters 40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Xylene	-	3	-
Titanium Dioxide	-	2B	-
Ethylbenzene	-	2B	-
Toluene	-	3	-
Methyl Isobutyl Ketone	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Acetone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Methyl Ethyl Ketone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Xylene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Toluene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Methyl Isobutyl Ketone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 2	Not determined	Not determined
Methyl Ethyl Ketone	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Xylene	Category 2	Not determined	Not determined
Butane	Category 2	Not determined	Not determined
Ethylbenzene	Category 2	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined
Methyl Isobutyl Ketone	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Propane	ASPIRATION HAZARD - Category 1
Xylene	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Date of issue/Date of revision

: 6/2/2015.

Date of previous issue

: 4/8/2015.

Version : 1.02

11/16

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	10036.3 mg/kg
Inhalation (gases)	48892.9 ppm

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Acetone	Acute EC50 20.565 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 6000000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 10000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata	96 hours
	Chronic NOEC 4.95 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.016 ml/L Fresh water	Crustaceans - Daphniidae	21 days
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Methyl Ethyl Ketone	Chronic NOEC 5 µg/l Marine water	Fish - Gasterosteus aculeatus - Larvae	42 days
	Acute EC50 >500000 µg/l Marine water	Algae - Skeletonema costatum	96 hours
Xylene	Acute EC50 5091000 µg/l Fresh water	Daphnia - Daphnia magna - Larvae	48 hours
	Acute LC50 3220000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Titanium Dioxide	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
Ethylbenzene	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6530 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
Toluene	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
Methyl Isobutyl Ketone	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Acetone	-	-	Readily
Methyl Ethyl Ketone	-	-	Readily
Xylene	-	-	Readily
Ethylbenzene	-	-	Readily
Toluene	-	-	Readily
Methyl Isobutyl Ketone	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
Xylene	-	8.1 to 25.9	low
Titanium Dioxide	-	352	low
Toluene	-	90	low

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	Special provisions LIMITED QUANTITY	Special provisions LIMITED QUANTITY	Special provisions (ERG#126)	Special provisions LIMITED QUANTITY	Emergency schedules (EmS) LIMITED QUANTITY, F-D, S-U

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances

Section 14. Transport information

and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations :
State regulations

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling

Section 16. Other information

instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

1602

Section 1. Identification

Product name : KRYLON® Interior/Exterior Paint
Ultra Flat Black

Product code : 1602

Other means of identification : Not available.

Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
KRYLON PRODUCTS GROUP
Cleveland, OH 44115

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (800) 247-3266

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
TOXIC TO REPRODUCTION (Fertility) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 24.3%

GHS label elements

Hazard pictograms :



Signal word : Danger

Section 2. Hazards identification

Hazard statements	: Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes serious eye irritation. Causes skin irritation. May damage the unborn child. Suspected of damaging fertility. Suspected of causing cancer. May be fatal if swallowed and enters airways. May cause respiratory irritation. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure.
Precautionary statements	
General	: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.
Response	: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

CAS number/other identifiers

Section 3. Composition/information on ingredients

Ingredient name	% by weight	CAS number
Acetone	32.0	67-64-1
Isobutyl Acetate	25.5	110-19-0
Propane	13.6	74-98-6
Toluene	8.6	108-88-3
Butane	6.4	106-97-8
Carbon Black	1.7	1333-86-4
Butyl Benzyl Phthalate	0.4	85-68-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical

- : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

- : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Acetone	<p>ACGIH TLV (United States, 4/2014). TWA: 500 ppm 8 hours. TWA: 1188 mg/m³ 8 hours. STEL: 750 ppm 15 minutes. STEL: 1782 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 250 ppm 10 hours. TWA: 590 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 2400 mg/m³ 8 hours.</p>
Isobutyl Acetate	<p>ACGIH TLV (United States, 4/2014). TWA: 150 ppm 8 hours. TWA: 713 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 150 ppm 10 hours. TWA: 700 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 150 ppm 8 hours. TWA: 700 mg/m³ 8 hours.</p>
Propane	<p>NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Toluene	<p>OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes.</p> <p>NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes.</p>
Butane	<p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</p> <p>ACGIH TLV (United States, 4/2014). STEL: 1000 ppm 15 minutes.</p>

Section 8. Exposure controls/personal protection

Carbon Black

NIOSH REL (United States, 10/2013).

TWA: 3.5 mg/m³ 10 hours.

TWA: 0.1 mg of PAHs/cm³ 10 hours.

OSHA PEL (United States, 2/2013).

TWA: 3.5 mg/m³ 8 hours.

ACGIH TLV (United States, 4/2014).

TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
pH	: 7
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
Evaporation rate	: 5.6 (butyl acetate = 1)
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1% Upper: 12.8%
Vapor pressure	: 13.5 kPa (101.325 mm Hg) [at 20°C]
Vapor density	: 1.55 [Air = 1]
Relative density	: 0.78
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): <0.07 cm ² /s (<7 cSt) Kinematic (40°C (104°F)): <0.07 cm ² /s (<7 cSt)

Aerosol product

Type of aerosol	: Spray
Heat of combustion	: 0.00002786 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Acetone	LD50 Oral	Rat	5800 mg/kg	-
Isobutyl Acetate	LD50 Dermal	Rabbit	>17400 mg/kg	-
	LD50 Oral	Rat	13400 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Carbon Black	LD50 Oral	Rat	>15400 mg/kg	-
Butyl Benzyl Phthalate	LD50 Dermal	Rabbit	>10000 mg/kg	-
	LD50 Dermal	Rat	6700 mg/kg	-
	LD50 Oral	Rat	2330 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Acetone	Eyes - Mild irritant	Human	-	186300 parts per million	-
	Eyes - Mild irritant	Rabbit	-	10 microliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
Isobutyl Acetate	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	395 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
Toluene	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-
Carbon Black	-	2B	-
Butyl Benzyl Phthalate	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Toluene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Acetone	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined
Butane	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Propane	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 nausea or vomiting
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General** : May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : May damage the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	5598.7 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Acetone	Acute EC50 20.565 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 6000000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 10000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata	96 hours
	Chronic NOEC 4.95 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.016 ml/L Fresh water	Crustaceans - Daphniidae	21 days
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Toluene	Chronic NOEC 5 µg/l Marine water	Fish - Gasterosteus aculeatus - Larvae	42 days
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
Butyl Benzyl Phthalate	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute EC50 0.22 ppm Marine water	Algae - Skeletonema costatum	72 hours
	Acute EC50 100 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 1000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 32.3 ppm Marine water	Crustaceans - Americamysis bahia	48 hours
Butyl Benzyl Phthalate	Acute LC50 510 µg/l Marine water	Fish - Cymatogaster aggregata - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.26 mg/l Fresh water	Daphnia - Daphnia magna	21 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Acetone	-	-	Readily
Toluene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Toluene	-	90	low
Butyl Benzyl Phthalate	-	1693.25	high

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	<u>Special provisions</u> LIMITED QUANTITY	<u>Special provisions</u> LIMITED QUANTITY	<u>Special provisions</u> (ERG#126)	<u>Special provisions</u> LIMITED QUANTITY	<u>Emergency schedules (EmS)</u> LIMITED QUANTITY, F-D, S-U

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations :

State regulations

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.



SAFETY DATA SHEET

1. Identification

Product identifier **Rust Proof Enamel Spray Paint - OSHA Red**

Other means of identification

Product code 18100

Recommended use Coating

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.
Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service

800-272-4620

24-Hour Emergency 800-424-9300 (US)

(CHEMTREC) 703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Aspiration hazard	Category 1
	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Do not breathe gas. Vapors will accumulate readily and may ignite. Do not breathe mist or vapor. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Call a physician/poison center immediately. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If exposed or concerned: Get medical attention. Call a poison center/doctor if you feel unwell. Get medical attention if you feel unwell. Do NOT induce vomiting. Take off contaminated clothing and wash before reuse.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose or store at temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Supplemental information

50.57% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 50.18% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	30 - 40
Propane		74-98-6	10 - 20
Toluene		108-88-3	10 - 20
n-Butane		106-97-8	5 - 10
Ethylene glycol propyl ether		2807-30-9	1 - 5
Methyl propyl ketone		107-87-9	1 - 5
Propylene glycol methyl ether acetate		108-65-6	1 - 5
Methyl isobutyl ketone		108-10-1	< 0.3
Titanium dioxide		13463-67-7	< 0.3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Remove contaminated clothing. Wash off with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.

Most important symptoms/effects, acute and delayed

Irritation of eyes and mucous membranes. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Small Fires: Powder. Water spray. Carbon dioxide (CO ₂). Dry sand. Large Fires: Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with skin and eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Store locked up. Store in a well-ventilated place. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Keep away from heat, sparks and open flame.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m ³ 1000 ppm	
Methyl isobutyl ketone (CAS 108-10-1)	PEL	410 mg/m ³ 100 ppm	
Methyl propyl ketone (CAS 107-87-9)	PEL	700 mg/m ³ 200 ppm	
Propane (CAS 74-98-6)	PEL	1800 mg/m ³ 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m ³	Total dust.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Methyl isobutyl ketone (CAS 108-10-1)	STEL	75 ppm
	TWA	20 ppm
Methyl propyl ketone (CAS 107-87-9)	STEL	150 ppm
	TWA	20 ppm
n-Butane (CAS 106-97-8)	STEL	1000 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Methyl isobutyl ketone (CAS 108-10-1)	STEL	300 mg/m3
		75 ppm
	TWA	205 mg/m3
		50 ppm
Methyl propyl ketone (CAS 107-87-9)	TWA	530 mg/m3
		150 ppm
n-Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Propylene glycol methyl ether acetate (CAS 108-65-6)	TWA	50 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Methyl isobutyl ketone (CAS 108-10-1)	1 mg/l	Methyl isobutyl ketone	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Propylene glycol methyl ether acetate (CAS 108-65-6) Can be absorbed through the skin.
Toluene (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3) Skin designation applies.

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear eye/face protection. Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear protective gloves such as nitrile or rubber.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Air monitoring is needed to determine actual employee exposure levels.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Aerosol.
Color	Red.
Odor	Aromatic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-138.8 °F (-94.9 °C) estimated
Initial boiling point and boiling range	-166 °F (-110 °C)
Flash point	-2.2 °F (-19 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.7 %
Flammability limit - upper (%)	10.9 %
Vapor pressure	1418.8 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.77 - 0.85
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	689 °F (365 °C)
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	82.5 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Fluorine. Chlorine. Nitrates.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful. May cause damage to organs by inhalation.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Irritant effects.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
Rust Proof Enamel Spray Paint - OSHA Red		
Acute		
<i>Dermal</i>		
LD50	Rabbit	16659.6465 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	17942.748 ppm, 4 hours estimated 7113.5137 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	10758.7539 mg/kg estimated

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Methyl isobutyl ketone (CAS 108-10-1)	2B Possibly carcinogenic to humans.
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure Narcotic effects.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results	
Rust Proof Enamel Spray Paint - OSHA Red			
Crustacea	EC50	Daphnia	86.8236 mg/l, 48 hours estimated
Fish	LC50	Fish	711.4924 mg/l, 96 hours estimated
Components	Species	Test Results	
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	21.6 - 23.9 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours

Components	Species	Test Results
Methyl isobutyl ketone (CAS 108-10-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 492 - 593 mg/l, 96 hours
Methyl propyl ketone (CAS 107-87-9)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 1190 - 1290 mg/l, 96 hours
Titanium dioxide (CAS 13463-67-7)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) > 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus) > 1000 mg/l, 96 hours
Toluene (CAS 108-88-3)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon, silver salmon (Oncorhynchus kisutch) 8.11 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Methyl isobutyl ketone	1.31
Methyl propyl ketone	0.91
n-Butane	2.89
Propane	2.36
Toluene	2.73

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products This material and its container must be disposed of as hazardous waste. If discarded, this product is considered a RCRA ignitable waste, D001. Consult authorities before disposal. Empty container can be recycled. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F

Contaminated packaging Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Special precautions for user	Not available.
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Not available.

Other information

Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

UN number UN1950
UN proper shipping name AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)
Class 2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS Not available.
Special precautions for user Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Toluene (CAS 108-88-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Toluene (CAS 108-88-3)

CERCLA Hazardous Substances: Reportable quantity

Acetone (CAS 67-64-1)	5000 lbs
Methyl isobutyl ketone (CAS 108-10-1)	5000 lbs
Toluene (CAS 108-88-3)	1000 lbs

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Toluene (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Methyl isobutyl ketone (CAS 108-10-1)	6715
Toluene (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 % weight/volumn
Methyl isobutyl ketone (CAS 108-10-1)	35 % weight/volumn
Toluene (CAS 108-88-3)	35 % weight/volumn

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Methyl isobutyl ketone (CAS 108-10-1)	6715
Toluene (CAS 108-88-3)	594

Food and Drug Administration (FDA) Not regulated.

Administration (FDA)

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Immediate Hazard - Yes
Hazard categories Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. New Jersey RTK - Substances: Listed substance

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Methyl propyl ketone (CAS 107-87-9)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Titanium dioxide (CAS 13463-67-7)
Toluene (CAS 108-88-3)

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Methyl propyl ketone (CAS 107-87-9)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

US. Pennsylvania RTK - Hazardous Substances

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Methyl propyl ketone (CAS 107-87-9)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Titanium dioxide (CAS 13463-67-7)
Toluene (CAS 108-88-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Methyl isobutyl ketone (CAS 108-10-1) Listed: November 4, 2011
Titanium dioxide (CAS 13463-67-7) Listed: September 2, 2011

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Toluene (CAS 108-88-3) Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3) Listed: August 7, 2009

Volatile organic compounds (VOC) regulations

EPA

Aerosol coatings (40 CFR 59, Subpt. E) Compliant

State

Aerosol coatings This product is regulated as a Non-Flat Paint. This product is compliant for sale in all 50 states.

Maximum incremental reactivity (MIR) 1.08

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	10-02-2013
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 2* Flammability: 4 Physical hazard: 1 Personal protection: B
NFPA ratings	Health: 2 Flammability: 4 Instability: 1
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

1. Identification

Product identifier **Rust Proof Enamel Spray Paint - OSHA White**

Other means of identification

Product code 18106

Recommended use Coating

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.
Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service

24-Hour Emergency (CHEMTREC) 800-272-4620

800-424-9300 (US)

703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Aspiration hazard	Category 1
	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe gas. Do not breathe mist or vapor. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Call a physician/poison center immediately. Do NOT induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If exposed or concerned: Get medical attention. Get medical attention if you feel unwell.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose or store at temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Supplemental information

53.25% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 53.18% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	30 - 40
Propane		74-98-6	10 - 20
Toluene		108-88-3	10 - 20
n-Butane		106-97-8	5 - 10
Titanium dioxide		13463-67-7	5 - 10
Ethylene glycol propyl ether		2807-30-9	1 - 5
Isobutyl acetate		110-19-0	1 - 5
Methyl propyl ketone		107-87-9	1 - 5
Methyl isobutyl ketone		108-10-1	< 1

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Remove contaminated clothing. Wash off with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.

Most important symptoms/effects, acute and delayed

Irritation of eyes and mucous membranes. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Small Fires: Powder. Water spray. Carbon dioxide (CO ₂). Dry sand. Large Fires: Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not breathe mist or vapor. Do not breathe gas. Avoid contact with skin and eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Store locked up. Store in a well-ventilated place. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Keep away from heat, sparks and open flame.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m ³ 1000 ppm	
Isobutyl acetate (CAS 110-19-0)	PEL	700 mg/m ³ 150 ppm	
Methyl isobutyl ketone (CAS 108-10-1)	PEL	410 mg/m ³ 100 ppm	
Methyl propyl ketone (CAS 107-87-9)	PEL	700 mg/m ³ 200 ppm	
Propane (CAS 74-98-6)	PEL	1800 mg/m ³ 1000 ppm	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Isobutyl acetate (CAS 110-19-0)	TWA	150 ppm
Methyl isobutyl ketone (CAS 108-10-1)	STEL	75 ppm
	TWA	20 ppm
Methyl propyl ketone (CAS 107-87-9)	STEL	150 ppm
n-Butane (CAS 106-97-8)	STEL	1000 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Isobutyl acetate (CAS 110-19-0)	TWA	700 mg/m3
		150 ppm
Methyl isobutyl ketone (CAS 108-10-1)	STEL	300 mg/m3
		75 ppm
	TWA	205 mg/m3
		50 ppm
Methyl propyl ketone (CAS 107-87-9)	TWA	530 mg/m3
		150 ppm
n-Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Methyl isobutyl ketone (CAS 108-10-1)	1 mg/l	Methyl isobutyl ketone	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Toluene (CAS 108-88-3)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3)

Skin designation applies.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear eye/face protection. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as nitrile or rubber.

Other Wear appropriate chemical resistant clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Aerosol.

Color White.

Odor Aromatic.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -145.8 °F (-98.8 °C) estimated

Initial boiling point and boiling range -47.2 °F (-44 °C)

Flash point -2.2 °F (-19 °C)

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.7 %

Flammability limit - upper (%) 10.9 %

Vapor pressure 1645 hPa estimated

Vapor density > 1 (air = 1)

Relative density 0.77 - 0.85

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature 793.4 °F (423 °C) estimated

Decomposition temperature Not available.

Viscosity (kinematic) Not available.

Percent volatile 80 % estimated

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Heat, flames and sparks. Contact with incompatible materials.

Incompatible materials Strong oxidizing agents. Fluorine. Chlorine. Nitrates.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful. May cause damage to organs by inhalation.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Irritant effects.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
Rust Proof Enamel Spray Paint - OSHA White		
Acute		
<i>Dermal</i>		
LD50	Rabbit	15434.0869 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	19566.3125 ppm, 4 hours estimated 7113.5137 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	10830.457 mg/kg estimated
Chronic		
<i>Oral</i>		
LD50	Mouse	4126.9849 g/kg estimated

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Methyl isobutyl ketone (CAS 108-10-1)	2B Possibly carcinogenic to humans.
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure Narcotic effects.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
Rust Proof Enamel Spray Paint - OSHA White		
Crustacea	EC50 Daphnia	91.5166 mg/l, 48 hours estimated
Fish	LC50 Fish	699.759 mg/l, 96 hours estimated
Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Crustacea	EC50 Water flea (Daphnia magna)	21.6 - 23.9 mg/l, 48 hours

Components		Species	Test Results
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
Methyl isobutyl ketone (CAS 108-10-1)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	492 - 593 mg/l, 96 hours
Methyl propyl ketone (CAS 107-87-9)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	1190 - 1290 mg/l, 96 hours
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Isobutyl acetate	1.78
Methyl isobutyl ketone	1.31
Methyl propyl ketone	0.91
n-Butane	2.89
Propane	2.36
Toluene	2.73

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products This material and its container must be disposed of as hazardous waste. If discarded, this product is considered a RCRA ignitable waste, D001. Consult authorities before disposal. Empty container can be recycled. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F

Contaminated packaging Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Special precautions for user	Not available.
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.

Environmental hazards No.
ERG Code 10L
Special precautions for user Not available.
Other information
Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

UN number UN1950
UN proper shipping name AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)
Class 2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS Not available.
Special precautions for user Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Toluene (CAS 108-88-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Isobutyl acetate (CAS 110-19-0)
Methyl isobutyl ketone (CAS 108-10-1)
Toluene (CAS 108-88-3)

CERCLA Hazardous Substances: Reportable quantity

Acetone (CAS 67-64-1)	5000 lbs
Isobutyl acetate (CAS 110-19-0)	5000 lbs
Methyl isobutyl ketone (CAS 108-10-1)	5000 lbs
Toluene (CAS 108-88-3)	1000 lbs

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethylene glycol propyl ether (CAS 2807-30-9)
Methyl isobutyl ketone (CAS 108-10-1)
Toluene (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Methyl isobutyl ketone (CAS 108-10-1)	6715
Toluene (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 % weight/volumn
Methyl isobutyl ketone (CAS 108-10-1)	35 % weight/volumn

Toluene (CAS 108-88-3)	35 % weight/volumn
DEA Exempt Chemical Mixtures Code Number	
Acetone (CAS 67-64-1)	6532
Methyl isobutyl ketone (CAS 108-10-1)	6715
Toluene (CAS 108-88-3)	594

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Immediate Hazard - Yes
Hazard categories Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. New Jersey RTK - Substances: Listed substance

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Isobutyl acetate (CAS 110-19-0)
Methyl isobutyl ketone (CAS 108-10-1)
Methyl propyl ketone (CAS 107-87-9)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Titanium dioxide (CAS 13463-67-7)
Toluene (CAS 108-88-3)

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Isobutyl acetate (CAS 110-19-0)
Methyl propyl ketone (CAS 107-87-9)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Titanium dioxide (CAS 13463-67-7)
Toluene (CAS 108-88-3)

US. Pennsylvania RTK - Hazardous Substances

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Isobutyl acetate (CAS 110-19-0)
Methyl isobutyl ketone (CAS 108-10-1)
Methyl propyl ketone (CAS 107-87-9)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Titanium dioxide (CAS 13463-67-7)
Toluene (CAS 108-88-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Ethylene glycol propyl ether (CAS 2807-30-9)
Isobutyl acetate (CAS 110-19-0)
Methyl isobutyl ketone (CAS 108-10-1)
n-Butane (CAS 106-97-8)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Methyl isobutyl ketone (CAS 108-10-1)	Listed: November 4, 2011
Titanium dioxide (CAS 13463-67-7)	Listed: September 2, 2011

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Toluene (CAS 108-88-3)	Listed: January 1, 1991
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US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3)	Listed: August 7, 2009
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Volatile organic compounds (VOC) regulations

EPA

Aerosol coatings (40 CFR 59, Subpt. E) Compliant

State

Aerosol coatings This product is regulated as a Non-Flat Paint. This product is compliant for sale in all 50 states.
Maximum incremental reactivity (MIR) 1.03

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	10-02-2013
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 2* Flammability: 4 Physical hazard: 1 Personal protection: B
NFPA ratings	Health: 2 Flammability: 4 Instability: 1
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

1. Identification

Product identifier **Upside Down Marking Paints - Alert Orange**

Other means of identification

Product code 18204

Recommended use Coating

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.

Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service 800-272-4620

24-Hour Emergency 800-424-9300 (US)

(CHEMTREC) 703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols Gases under pressure	Category 1 Liquefied gas
Health hazards	Carcinogenicity Aspiration hazard	Category 2 Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Suspected of causing cancer.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Call a physician/poison center immediately. Do NOT induce vomiting. If exposed or concerned: Get medical attention.

Storage Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose or store at temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC) Harmful to aquatic life with long lasting effects.

Supplemental information

53.89% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water		7732-18-5	20 - 30
Calcium carbonate		1317-65-3	10 - 20
n-Butane		106-97-8	10 - 20
Propane		74-98-6	10 - 20
Solvent naphtha (petroleum), light aliph.		64742-89-8	10 - 20
Distillates (petroleum), hydrotreated light		64742-47-8	1 - 5
Titanium dioxide		13463-67-7	< 1

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Small Fires: Powder. Water spray. Carbon dioxide (CO ₂). Dry sand. Large Fires: Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Store locked up. Store in a well-ventilated place. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	PEL	5 mg/m ³	Respirable fraction.
Propane (CAS 74-98-6)	PEL	15 mg/m ³	Total dust.
		1800 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	PEL	1000 ppm	Total dust.
		15 mg/m ³	

US. ACGIH Threshold Limit Values

Components	Type	Value
n-Butane (CAS 106-97-8)	STEL	1000 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	TWA	5 mg/m ³	Respirable.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	10 mg/m ³	Total
		100 mg/m ³	
n-Butane (CAS 106-97-8)	TWA	1900 mg/m ³	
		800 ppm	
Propane (CAS 74-98-6)	TWA	1800 mg/m ³	
		1000 ppm	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves such as nitrile or rubber.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Material name: Upside Down Marking Paints - Alert Orange

1055 Version #: 01 Issue date: 10-01-2013

SDS US

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Physical state	Liquid.
Form	Aerosol.
Color	Orange.
Odor	Aromatic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-138.8 °F (-94.9 °C)
Initial boiling point and boiling range	-47.2 °F (-44 °C)
Flash point	-2.2 °F (-19 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.5 %
Flammability limit - upper (%)	10.9 %
Vapor pressure	2221.9 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.77 - 0.85
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	410 °F (210 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	75 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Acids. Fluorine. Chlorine. Nitrates.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
Upside Down Marking Paints - Alert Orange		
Acute		
<i>Dermal</i>		
LD50	Rabbit	25990.8555 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	8179.4048 mg/l, 15 Minutes estimated

Product	Species	Test Results
		6351.3516 mg/l, 4 hours estimated
<i>Oral</i> LD50	Rat	90459.0625 mg/kg estimated
Chronic <i>Oral</i> LD50	Mouse	2626.2632 g/kg estimated
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Suspected of causing cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Titanium dioxide (CAS 13463-67-7)		2B Possibly carcinogenic to humans.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.		
Product	Species	Test Results	
Upside Down Marking Paints - Alert Orange			
<i>Acute</i>			
Crustacea	EC50	Daphnia	9545.4541 mg/l, 48 hours estimated
Fish	LC50	Fish	15568.5059 mg/l, 96 hours estimated
Components	Species	Test Results	
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)			
<i>Acute</i>			
	EC50	Invertebrate (saltwater)	4720 mg/l, 96 hours
Aquatic			
<i>Acute</i>			
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	1740 mg/l, 96 hours
		Fathead minnow (<i>Pimephales promelas</i>)	45 mg/l, 96 hours
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (<i>Daphnia magna</i>)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (<i>Fundulus heteroclitus</i>)	> 1000 mg/l, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	No data available.		
Partition coefficient n-octanol / water (log Kow)			
n-Butane			2.89
Propane			2.36
Mobility in soil	No data available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal considerations

Disposal of waste from residues / unused products	This material and its container must be disposed of as hazardous waste. If discarded, this product is considered a RCRA ignitable waste, D001. Consult authorities before disposal. Empty container can be recycled. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Not available.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Not available.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
SARA 304 Emergency release notification	Not regulated.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.**Food and Drug Administration (FDA)** Not regulated.**Superfund Amendments and Reauthorization Act of 1986 (SARA)****Section 311/312** Immediate Hazard - Yes**Hazard categories** Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No**US state regulations****US. New Jersey RTK - Substances: Listed substance**

Calcium carbonate (CAS 1317-65-3)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Titanium dioxide (CAS 13463-67-7)

US. Massachusetts RTK - Substance List

Calcium carbonate (CAS 1317-65-3)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. Pennsylvania RTK - Hazardous Substances

Calcium carbonate (CAS 1317-65-3)

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)

Listed: June 11, 2004

Titanium dioxide (CAS 13463-67-7)

Listed: September 2, 2011

Volatile organic compounds (VOC) regulations**EPA****Aerosol coatings (40 CFR 59, Subpt. E)** Compliant**State****Aerosol coatings** This product is regulated as a Ground Traffic and Marking Coating. This product is compliant for sale in all 50 states.**Maximum incremental reactivity (MIR)** 0.58**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	10-01-2013
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 1* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 1 Flammability: 4 Instability: 0
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

1. Identification

Product identifier **Upside Down Marking Paints-Safety Red**

Other means of identification

Product code 18200

Recommended use Coating

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.
Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical 800-521-3168

Assistance

Customer Service 800-272-4620

24-Hour Emergency 800-424-9300 (US)

(CHEMTREC) 703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols Gases under pressure	Category 1 Liquefied gas
Health hazards	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid release to the environment.

Response If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting.

Storage Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

55% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water		7732-18-5	20 - 30
Calcium carbonate		1317-65-3	10 - 20
n-Butane		106-97-8	10 - 20
Propane		74-98-6	10 - 20
Solvent naphtha (petroleum), light aliph.		64742-89-8	10 - 20
Distillates (petroleum), hydrotreated light		64742-47-8	3 - 5

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Small Fires: Powder. Dry sand. Carbon dioxide (CO2). Water spray. Large Fires: Alcohol resistant foam. Water spray.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not re-use empty containers. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Wash hands thoroughly after handling. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid release to the environment. Do not empty into drains. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
Propane (CAS 74-98-6)	PEL	1800 mg/m ³ 1000 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value
n-Butane (CAS 106-97-8)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Total
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m ³	
n-Butane (CAS 106-97-8)	TWA	1900 mg/m ³ 800 ppm	
Propane (CAS 74-98-6)	TWA	1800 mg/m ³ 1000 ppm	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as nitrile or rubber.

Other Wear appropriate chemical resistant clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form	Aerosol.
Color	Red.
Odor	Aromatic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	-47.2 °F (-44 °C)
Flash point	-2.2 °F (-19 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.5 %
Flammability limit - upper (%)	10.9 %
Vapor pressure	2237.8 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.77 - 0.85
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	410 °F (210 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	75 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Nitrates. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
Upside Down Marking Paints-Safety Red		
Acute		
<i>Dermal</i>		
LD50	Rabbit	26913.1016 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	6351.3516 mg/l, 4 hours estimated

Product	Species	Test Results
Oral LD50	Rat	82136.3438 mg/kg estimated
Chronic Oral LD50	Mouse	1699.3467 g/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not expected to be hazardous by OSHA criteria.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
Upside Down Marking Paints-Safety Red		
<i>Acute</i>		
Crustacea	EC50 Daphnia	6176.4707 mg/l, 48 hours estimated
Fish	LC50 Fish	12080.6436 mg/l, 96 hours estimated
Components	Species	Test Results
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
<i>Acute</i>		
	EC50 Invertebrate (saltwater)	4720 mg/l, 96 hours
Aquatic		
<i>Acute</i>		
Fish	LC50 Bluegill (<i>Lepomis macrochirus</i>)	1740 mg/l, 96 hours
	Fathead minnow (<i>Pimephales promelas</i>)	45 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Partition coefficient n-octanol / water (log Kow)	
n-Butane	2.89
Propane	2.36
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	This material and its container must be disposed of as hazardous waste. If discarded, this product is considered a RCRA ignitable waste, D001. Consult authorities before disposal. Empty container can be recycled. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.**Food and Drug Administration (FDA)** Not regulated.**Superfund Amendments and Reauthorization Act of 1986 (SARA)****Section 311/312** Immediate Hazard - Yes**Hazard categories** Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No**US state regulations****US. New Jersey RTK - Substances: Listed substance**

Calcium carbonate (CAS 1317-65-3)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. Massachusetts RTK - Substance List

Calcium carbonate (CAS 1317-65-3)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. Pennsylvania RTK - Hazardous Substances

Calcium carbonate (CAS 1317-65-3)

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. Rhode Island RTK

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)

Listed: June 11, 2004

Volatile organic compounds (VOC) regulations**EPA****Aerosol coatings (40 CFR 59, Subpt. E)** Compliant**State****Aerosol coatings** This product is regulated as a Ground Traffic and Marking Coating. This product is compliant for sale in all 50 states.**Maximum incremental reactivity (MIR)** 0.58**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	09-30-2013
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 1* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 1 Flammability: 4 Instability: 0
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

1. Identification

Product identifier **Upside Down Marking Paints - White**

Other means of identification

Product code 18206

Recommended use Coating

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.
Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical 800-521-3168

Assistance

Customer Service 800-272-4620

24-Hour Emergency 800-424-9300 (US)

(CHEMTREC) 703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols Gases under pressure	Category 1 Liquefied gas
Health hazards	Carcinogenicity Aspiration hazard	Category 2 Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Suspected of causing cancer.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not apply while equipment is energized. Pressurized container: Do not pierce or burn, even after use. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Call a physician/poison center immediately. Do NOT induce vomiting. If exposed or concerned: Get medical attention.

Storage

Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose or store at temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

Harmful to aquatic life with long lasting effects.

Supplemental information

58.12% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water		7732-18-5	20 - 30
Calcium carbonate		1317-65-3	10 - 20
n-Butane		106-97-8	10 - 20
Propane		74-98-6	10 - 20
Solvent naphtha (petroleum), light aliph.		64742-89-8	10 - 20
Distillates (petroleum), hydrotreated light		64742-47-8	5 - 10
Titanium dioxide		13463-67-7	5 - 10

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Small Fires: Powder. Water spray. Carbon dioxide (CO ₂). Dry sand. Large Fires: Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Store locked up. Store in a well-ventilated place. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	PEL	5 mg/m ³	Respirable fraction.
Propane (CAS 74-98-6)	PEL	15 mg/m ³	Total dust.
		1800 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	PEL	1000 ppm	Total dust.
		15 mg/m ³	

US. ACGIH Threshold Limit Values

Components	Type	Value
n-Butane (CAS 106-97-8)	STEL	1000 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium carbonate (CAS 1317-65-3)	TWA	5 mg/m ³	Respirable.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	10 mg/m ³	Total
		100 mg/m ³	
n-Butane (CAS 106-97-8)	TWA	1900 mg/m ³	
		800 ppm	
Propane (CAS 74-98-6)	TWA	1800 mg/m ³	
		1000 ppm	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves such as nitrile or rubber.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Material name: Upside Down Marking Paints - White
1056 Version #: 01 Issue date: 10-01-2013

Physical state	Liquid.
Form	Aerosol.
Color	White.
Odor	Aromatic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-138.8 °F (-94.9 °C)
Initial boiling point and boiling range	-47.2 °F (-44 °C)
Flash point	-2.2 °F (-19 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.5 %
Flammability limit - upper (%)	10.9 %
Vapor pressure	2505.3 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.77 - 0.85
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	410 °F (210 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	71 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Acids. Fluorine. Chlorine. Nitrates.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
Upside Down Marking Paints - White		
Acute		
<i>Dermal</i>		
LD50	Rabbit	23109.1211 mg/kg estimated
<i>Inhalation</i>		
LC50	Rat	12521.0928 ppm, 4 hours estimated

Product	Species	Test Results
		8179.4048 mg/l, 15 Minutes estimated 6351.3516 mg/l, 4 hours estimated
<i>Oral</i> LD50	Rat	57004.2344 mg/kg estimated
Chronic <i>Oral</i> LD50	Mouse	2311.1116 g/kg estimated
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Suspected of causing cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Titanium dioxide (CAS 13463-67-7)		2B Possibly carcinogenic to humans.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.	

12. Ecological information

Ecotoxicity			Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
Product	Species	Test Results	
Upside Down Marking Paints - White			
Fish	LC50	Fish	9113.4414 mg/l, 96 hours estimated
<i>Acute</i>			
Crustacea	EC50	Daphnia	8400 mg/l, 48 hours estimated
Components			
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)			
<i>Acute</i>			
	EC50	Invertebrate (saltwater)	4720 mg/l, 96 hours
Aquatic			
<i>Acute</i>			
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	1740 mg/l, 96 hours
		Fathead minnow (<i>Pimephales promelas</i>)	45 mg/l, 96 hours
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (<i>Daphnia magna</i>)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (<i>Fundulus heteroclitus</i>)	> 1000 mg/l, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	No data available.		
Partition coefficient n-octanol / water (log Kow)			
n-Butane			2.89
Propane			2.36
Mobility in soil	No data available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal considerations

Disposal of waste from residues / unused products	This material and its container must be disposed of as hazardous waste. If discarded, this product is considered a RCRA ignitable waste, D001. Consult authorities before disposal. Empty container can be recycled. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Not available.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, limited quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Not available.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
SARA 304 Emergency release notification	Not regulated.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.**Food and Drug Administration (FDA)** Not regulated.**Superfund Amendments and Reauthorization Act of 1986 (SARA)****Section 311/312** Immediate Hazard - Yes**Hazard categories** Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No**US state regulations****US. New Jersey RTK - Substances: Listed substance**

Calcium carbonate (CAS 1317-65-3)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Titanium dioxide (CAS 13463-67-7)

US. Massachusetts RTK - Substance List

Calcium carbonate (CAS 1317-65-3)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania RTK - Hazardous Substances

Calcium carbonate (CAS 1317-65-3)

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

n-Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)

Listed: June 11, 2004

Titanium dioxide (CAS 13463-67-7)

Listed: September 2, 2011

Volatile organic compounds (VOC) regulations**EPA****Aerosol coatings (40 CFR 59, Subpt. E)** Compliant**State****Aerosol coatings** This product is regulated as a Ground Traffic and Marking Coating. This product is compliant for sale in all 50 states.**Maximum incremental reactivity (MIR)** 0.54**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	10-01-2013
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 1* Flammability: 4 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 1 Flammability: 4 Instability: 0
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.

SAFETY DATA SHEET



Revision Date: 04/01/2015
Revision Number: 001.0

1. PRODUCT AND COMPANY INFORMATION

Product Name:	1001 RUST PENETRANT	Item number(s):	14-01
Product Type:	Industrial solvent	Region(s):	U.S.A
Restriction of Use:	None Identified	Telephone:	949 646-9035
Company Address:	Armite Laboratories Inc. 1560 Superior Ave. Ste. A-4 Costa Mesa, CA 92627	Product Emergency:	CHEM-TEL 800-225-3924

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor: Colorless. Liquid. Hydrocarbon.

Health Hazards: Harmful: may cause lung damage if swallowed.

Safety Hazards: Combustible liquid. In use, may form flammable/explosive vapor-air mixture. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Electrostatic charges may be generated during pumping. Electrostatic discharges may cause fire.

Signal Word	Hazard Class	Hazard Category	Pictogram(s)
WARNING	SKIN IRRITANT	3	

Hazard Statements

Causes skin irritation.
Harmful if swallowed.

Precautionary Statements

Prevention:
Use personal protective equipment as required.
Keep container tightly closed.
May cause respiratory irritation.

Response:

IF SWALLOWED do NOT induce vomiting. May cause lung damage. Do not induce vomiting. Call a poison center/doctor if you feel unwell. IF IN EYES: Rinse with water for several minutes. Remove contact lenses if present and easy to remove, and continue to rinse. IF ON SKIN: Wash with plenty of soap & water. Seek medical attention if irritation persists. Wash hands thoroughly after handling.

Signs & Symptoms: If material enters lungs, signs & symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. Defatting dermatitis signs and symptoms may include a burning sensation and/or dried/cracked appearance. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. May aggravate pre-existing skin conditions.

Storage Keep out of reach of children. Combustible Liquid. Storage Temp: Ambient.

Disposal: Follow Federal, State & Local rules & regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component(s)	CAS Number	Percentage*
Solvent Naphtha (Petrolatum) Medium Aliphatic	64742-88-7	100.0%W

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4. FIRST AID MEASURES

General Information: Not expected to be a health hazard when used under normal conditions.

Ingestion: If swallowed: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration seek medical attention. If any of the following occur within 6 hrs, transport to medical facility: fever greater than 101°F, shortness of breath, chest congestion or continued coughing or wheezing.

Skin contact: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap and water if available.

Eye contact: Flush eye with copious quantities of water. If persistent irritation occurs, seek medical attention.

Inhalation: Remove to fresh air. If rapid recovery does not occur, transport for medical attention.

Advise to Physician: Potential for chemical pneumonitis –call a doctor or poison control center for guidance.

5. FIRE FIGHTING MEASURES

Flash Point: Typical 61-66°C/142-151°F (ASTM D-93 / PMCC)

Auto Ignition Temperature: 235 -315°C / 142-151°F (ASTM E-659)

Explosion / Flammability limits in air: 0.7 -6% (V)

Extinguishing media: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires. Do not discharge extinguishing waters into the aquatic environment.

Unsuitable Extinguishing Media: DO NOT use water in jet.

Special firefighting equipment: Wear full protective clothing and self-contained breathing apparatus.

Specific Hazards: Carbon monoxide may be involved if incomplete combustion occurs. Will float & may reignite on surface water. The vapor is heavier than air and spreads along the ground and distant ignition is possible.

Additional Advice: Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

Protective measures: Avoid contact with spilled or released material. Immediately remove all contaminated clothing. See #8 of this SDS for PPE guidance. See #13 of this SDS for guidance on disposal of spilled material. Shut off leaks, if possible without personal risk. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product & firefighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditched or waterways by using sand or earth or other appropriate barrier. Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding or grounding (earthing) all equipment. Monitor area with combustible gas indicator.

Clean-up method: For small spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for recovery or safe disposal. Allow residue to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of properly.

For large spills(>1 drum) transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residue with water. Retain as contaminated waste. Allow residues to evaporate or soak up with appropriate absorbent material and dispose of safely.

Additional Advice: See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. U.S. regulation may require reporting releases of this material to the environment which exceeds the reportable quantity (refer to chapter 15) to the National Release Center at (800) 424-8802. Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such spills into surface waters must be reported to the National Response Center. This material is covered by EPA's Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

7. HANDLING AND STORAGE

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General Precautions: Avoid breathing vapors or contact with material. Use only in well ventilated areas. Wash thoroughly after handling. See #8 of this SDS for guidance of personal protective equipment selection. Use this data sheet as input for a risk assessment of local circumstances to help determine appropriate controls.

Handling: Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid contact with eyes, skin and clothing. Electrostatic charges may be generated during pumping –such discharge may cause fire. Ensure electrical continuity by bonding & grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic charge. DO NOT use compressed air for filling, discharge or handling operations. Avoid splash filling.

Recommended Materials: For containers, or container lining use mild steel, stainless steel.

Unsuitable Materials: Avoid prolonged contact with natural, butyl or nitrile rubbers.

Container Advice: Containers, even those that are emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

Storage: Bulk storage must be stored in a diked area. Storage Temperature: Ambient.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

In the absence of occupational exposure standards for this product, it is recommended that the following are adopted.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Stoddard Solvent	100ppm TWA	(Z1 PEL) 500ppm 2900 mg/m3 (Z1A TWA) 100ppm 2900 mg/m3		

Personal Protective Equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific condition and meeting relevant legislation. Where air filtering respirators are suitable, select combination mask & filter. Filter suitable for organic gases and vapors [boiling point >65°C (149°F) meeting EN141387. Where air filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Hand Protection: Longer term protection: Nitrile rubber gloves. Incidental contact/Splash protection: PVC or neoprene rubber gloves. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, wash and dry hands thoroughly. Application of non-perfumed moisturizer is recommended.

Eye Protection: Chemical splash goggles (chemical monogoggles).

Protective clothing: Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

Monitoring method: Monitoring of the concentration of substances in the breathing zone of workers may be required to confirm compliance with OEL and adequacy of exposure controls.

Environmental exposure controls: Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapor.

9. PHYSICAL AND CHEMICAL PROPERTIES

The physical and chemical property data are typical values and do not constitute a specification.

Appearance: Colorless Liquid

VOC content: 100%

Odor: Hydrocarbon

Odor threshold: Not available

Evaporation rate: (nBuAc=1): 0.04 (ASTM D3539)

Density: Typical 0.780g/cm³ at 15°C / 59°F (ASTM D-4052)

Specific gravity: 0.78 – 0.81

Vapor pressure: Typical 30-93 Pa at 0°C / 32°F

Auto-ignition temp: 235-315° / 455-599°F (ASTM E-659)

Boiling point: Typical 179-213.9°C / 354-417.0°F

Flash point: Typical 61-66°C/142-151°F(ASTM D93/PMCC)

pH: Not applicable

Pour point: <-25°C / -13°F

Viscosity: Not available

Solubility in water: Insoluble

Partition coefficient: Not determined

Flammable/Explosive limits in air: 0.7- 6% (V)

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10. STABILITY AD REACTIVITY

Stability: Stable at normal conditions of use.

Materials to avoid: Strong oxidizing agents.

Conditions to avoid: Heat, spark, open flames and other ignition sources.

Hazardous decomposition products: Thermal decomposition if highly dependent on conditions. A complex mixture of airborne solids, liquids & gases, including carbon monoxide, carbon dioxide and other organic compounds will be involved when this material undergoes combustion or thermal or oxidative degradation.

11. TOXICOLOGICAL INFORMATION

Information given is based on product testing, and/or similar products, and/or components.

Acute oral toxicity: Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Skin contact: May cause moderate skin irritation (but insufficient to classify). Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Serious Eye damage/irritation: Not irritating to the eyes.

Repeated dose toxicity: Kidney: caused kidney effects in male rats which are not considered relevant to humans.

Hazardous Component(s)	LD50s and LC50s		Immediate and Delayed Effects
Solvent Naphtha	Low Toxicity: Oral LD50 >2000 mg/kg, Rat Low Toxicity: Dermal LD50 >2000 mg/kg Rat Low toxicity Inhalation: LC50 greater than near-saturated vapor concentration. / 1 hr Rat		
Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Stoddard Solvent	None	None	None

12. ECOLOGICAL INFORMATION

Acute Toxicity (Fish, Aquatic Invertebrates, Algae): Practically non toxic: LL/EL/IL50 >100mg/l

Mobility: Floats on water. Absorbs to soil and has low mobility.

Persistence/degradability: Readily biodegradable. Oxidizes rapidly by photo-chemical reaction in air.

Bioaccumulation: Has the potential to bioaccumulate.

Other Adverse Effects: Data not available.

13. DISPOSAL CONSIDERATIONS

Material disposal: Recover & recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains, or water courses. Waste water should not be allowed to contaminate soil or water.

Container Disposal: Drain container thoroughly. After draining, vent in a safe place away from spark and fire. Residue may cause explosion hazard if heated above the flash point. Do not puncture, cut or weld unclean drums. Send to drum recovery or metal reclaimer.

Local Legislation: Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be in compliance.

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14. TRANSPORTATION INFORMATION

US Dept of Transportation (49 CFR)

Not regulated in amounts under 119 gallon capacity or less.
In amounts **over 119 gallon capacity** material ships as the following:

Proper shipping name: UN 1268

Hazard class or division: Petroleum Distillates, n.o.s.

Identification number: Combustible liquid

Packing group: III Contains OIL Emergency Response Guide: 128

This material is an "OIL" under 49CFR part 130 when transported in a container of 3500 gallon capacity or greater.

ICSO/IATA (Country variations may apply) This material is not classified as dangerous under IATA

IMO/IMDG material is not classified as dangerous under IMDG

15. REGULATORY INFORMATION

Regulatory Information

DSL	Listed
INV (CN)	Listed
TSCA	Listed
EINECS	Listed 265-191-7
KECI (KR)	Listed KE-31664
PICCS (PH)	Listed
AICS	Listed

SARA Section 311/312: Fire Hazard

State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

HMIS Rating (Health, Fire, Reactivity): 1, 2, 0

NFPA Rating (Health, Fire, Reactivity): 1, 2, 0

Prepared by: Armite Laboratories Inc.

Original Issue Date: April 1, 2015

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Safety Data Sheet - Gorilla Glue

Date Revised: 05/21/2015
Date Issued: 05/21/2015

Version: 1.0

FOR CHEMICAL EMERGENCY:

During Business Hours: (800) 966-3458 | Outside Business Hours: (800) 420-7186

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Gorilla Glue

Synonyms: Polyurethane Adhesive

Intended Use of the Product

Consumer Adhesives for building, carpentry, or hobby projects.

Name, Address, and Telephone of the Responsible Party

Company

The Gorilla Glue Company
4550 Red Bank Expressway
Cincinnati, Ohio 45227
513-271-3300

www.gorillatough.com

Emergency Telephone Number

Emergency number : 1-800-420-7186 (Prosar)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Acute Tox. 4 (Inhalation:dust,mist) H332
Skin Irrit. 2 H315
Eye Irrit. 2B H320
Resp. Sens. 1 H334
Skin Sens. 1 H317
STOT SE 3 H335
STOT RE 1 H372

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H320 - Causes eye irritation.
H332 - Harmful if inhaled.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H372 - Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements (GHS-US)

: P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear protective gloves, protective clothing, and eye protection.



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P284 - [In case of inadequate ventilation] wear respiratory protection.
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a poison center or doctor if you feel unwell.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a poison center or doctor.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards: May cause gastro-intestinal blockage if swallowed. Seek medical advice immediately. Contains isocyanates. May produce an allergic reaction.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Polyisocyanate Prepolymer based on MDI	(CAS No) 67815-87-6	40 - 70	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 1, H372
Polymeric Diphenylmethane Diisocyanate (pMDI)	(CAS No) 9016-87-9	10 - 30	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 1, H372
4,4'-Methylenediphenyl diisocyanate	(CAS No) 101-68-8	10 - 30	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 2, H373
Diphenylmethane Diisocyanate (MDI) Mixed Isomers	(CAS No) 26447-40-5	1 - 5	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Resp. Sens. 1, H334 Skin Sens. 1, H317



Safety Data Sheet - Gorilla Glue

Date Revised: 05/21/2015
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Version: 1.0

FOR CHEMICAL EMERGENCY:

During Business Hours: (800) 966-3458 | Outside Business Hours: (800) 420-7186

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

			STOT SE 3, H335 STOT RE 1, H372
Additive	(CAS No) Trade Secret	0.1 - 1	Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Skin Sens. 1, H317 STOT SE 3, H335

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Using proper respiratory protection, immediately move the exposed person to fresh air. Seek medical attention immediately.

Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Call a POISON CENTER or doctor/physician if you feel unwell. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Harmful if inhaled. Exposure may produce an allergic reaction. Irritation to eyes, skin and respiratory tract. Inhalation may cause allergic respiratory reaction with asthma-like symptoms and difficulty breathing.

Inhalation: Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Skin Contact: Causes skin irritation. Exposure may produce an allergic reaction.

Eye Contact: Causes eye irritation.

Ingestion: Ingestion is likely to be harmful or have adverse effects. May cause gastro-intestinal blockage if swallowed.

Chronic Symptoms: May cause damage to organs through prolonged or repeated exposure.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide, dry powder, and foam. In cases of large scale fires, alcohol-resistant foams are preferred. If water is used, it should be used in very large quantities. The reaction between water and isocyanate may be vigorous.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Exothermic reaction with amines and alcohols; reacts with water forming heat, CO₂, and insoluble polyurea. The combined effect of CO₂ and heat can produce enough pressure to rupture a closed container.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not allow run-off from fire fighting to enter drains or water courses.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Fire will produce dense black smoke. Carbon oxides (CO, CO₂). Nitrogen compounds.



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Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Absorb and/or contain spill with inert material, then place in suitable container.

Methods for Cleaning Up: Remove mechanically; cover remainders with wet absorbent material (e. g. sand, earth, sawdust). After approx. 15 min. transfer to waste container and do not seal (evolution of CO₂). Keep damp in a safe ventilated area for several days. Clean up spills immediately and dispose of waste safely.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Store away from incompatible materials. Keep product away from sources of alcohols, amines, or other materials that react with isocyanates. Keep out of reach of children and animals. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Amines. Alcohols. Copper and its alloys. Water.

Storage Temperature: 18 - 30 °C (64.4 - 86 °F)

Specific End Use(s)

Consumer Adhesives for building, carpentry, or hobby projects.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.



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Polymeric Diphenylmethane Diisocyanate (pMDI) (9016-87-9)		
Alberta	OEL TWA (mg/m ³)	0.07 mg/m ³
Alberta	OEL TWA (ppm)	0.005 ppm
4,4'-Methylenediphenyl diisocyanate (101-68-8)		
USA ACGIH	ACGIH TWA (ppm)	0.005 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	0.2 mg/m ³
USA OSHA	OSHA PEL (Ceiling) (ppm)	0.02 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	0.005 ppm
USA NIOSH	NIOSH REL (ceiling) (mg/m ³)	0.2 mg/m ³
USA NIOSH	NIOSH REL (ceiling) (ppm)	0.020 ppm
USA IDLH	US IDLH (mg/m ³)	75 mg/m ³
Alberta	OEL TWA (mg/m ³)	0.05 mg/m ³
Alberta	OEL TWA (ppm)	0.005 ppm
British Columbia	OEL Ceiling (ppm)	0.01 ppm
British Columbia	OEL TWA (ppm)	0.005 ppm
Manitoba	OEL TWA (ppm)	0.005 ppm
New Brunswick	OEL TWA (mg/m ³)	0.051 mg/m ³
New Brunswick	OEL TWA (ppm)	0.005 ppm
Newfoundland & Labrador	OEL TWA (ppm)	0.005 ppm
Nova Scotia	OEL TWA (ppm)	0.005 ppm
Ontario	OEL Ceiling (ppm)	0.02 ppm (designated substances regulation)
Ontario	OEL TWA (ppm)	0.005 ppm (designated substances regulation) 0.005 ppm (applies to workplaces to which the designated substances regulation does not apply)
Prince Edward Island	OEL TWA (ppm)	0.005 ppm
Québec	VEMP (mg/m ³)	0.051 mg/m ³
Québec	VEMP (ppm)	0.005 ppm
Saskatchewan	OEL STEL (ppm)	0.015 ppm
Saskatchewan	OEL TWA (ppm)	0.005 ppm
Yukon	OEL Ceiling (mg/m ³)	0.2 mg/m ³
Yukon	OEL Ceiling (ppm)	0.02 ppm
Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)		
Mexico	OEL TWA (mg/m ³)	0.2 mg/m ³ 0.051 mg/m ³
Mexico	OEL TWA (ppm)	0.02 ppm 0.005 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	0.2 mg/m ³
USA OSHA	OSHA PEL (Ceiling) (ppm)	0.02 ppm
Nunavut	OEL Ceiling (mg/m ³)	0.2 mg/m ³
Nunavut	OEL Ceiling (ppm)	0.02 ppm
Northwest Territories	OEL Ceiling (mg/m ³)	0.2 mg/m ³
Northwest Territories	OEL Ceiling (ppm)	0.02 ppm

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide sufficient ventilation to keep vapors below permissible exposure limit. Ensure all national/local regulations are observed.



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Personal Protective Equipment: Protective clothing. Safety glasses. Gloves. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Brown
Odor	: Earthy, musty
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: 0 °C (Calculated) (32 °F)
Freezing Point	: Not available
Boiling Point	: 208 °C (406.4 °F)
Flash Point	: > 93 °C Closed Cup (199.4 °F)
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: < 0.0001 mm Hg @ 25 °C (77 °F)
Relative Vapor Density at 20 °C	: Not available
Relative Density	: 1.138 g/cm ³
Specific gravity / density	: 1.138 g/cm ³ @ 20 °C (68 °F)
Specific Gravity	: 1.137 @ 25 °C (77 °F)
Solubility	: Insoluble in water.
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Exothermic reaction with amines and alcohols; reacts with water forming heat, CO₂, and insoluble polyurea. The combined effect of CO₂ and heat can produce enough pressure to rupture a closed container.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures.



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Incompatible Materials: Strong acids, strong bases, strong oxidizers. Alcohols. Copper and its alloys. Amines. Water.

Hazardous Decomposition Products: Carbon oxides (CO, CO₂). Nitrogen compounds. Cyanides. Isocyanates. Fire will produce dense black smoke.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Inhalation:dust,mist: Harmful if inhaled.

LD50 and LC50 Data:

Gorilla Glue	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 9400 mg/kg (OECD Test Guideline 402)
LC50 Inhalation Rat	0.49 mg/l/4h
ATE US (vapors)	0.49 mg/l/4h
ATE US (dust, mist)	0.49 mg/l/4h
Additional information	Toxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers). For the inhalation study, note that the test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of evidence, a modified classification for acute inhalation toxicity is justified

Skin Corrosion/Irritation: Causes skin irritation. (Rabbit, slightly irritating)

Serious Eye Damage/Irritation: Causes eye irritation.

Respiratory or Skin Sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified (Genetic Toxicity in Vitro: Bacterial - gene mutation assay: negative (Salmonella typhimurium, Metabolic Activation: with/without))

Teratogenicity: Rat, female, inhalation, gestation days 6-15, 6 hrs/day, NOAEL (teratogenicity): 12 mg/m³, NOAEL (maternal) 4 mg/m³. No teratogenic effects observed at doses tested. Fetotoxicity seen only with maternal toxicity.

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs through prolonged or repeated exposure.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Symptoms/Injuries After Skin Contact: Causes skin irritation. Exposure may produce an allergic reaction.

Symptoms/Injuries After Eye Contact: Causes eye irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects. May cause gastro-intestinal blockage if swallowed.

Chronic Symptoms: May cause damage to organs through prolonged or repeated exposure.

Gorilla Glue	
NOAEL (inhalation, rat, dust/mist/fume, 90 days)	0.001 mg/l/6h/day Irritation to lungs and nasal cavity. 2 years, inhalation: NOAEL: 0.2, (rat, Male/Female, 6 hrs/day 5 days/week). Irritation to lungs and nasal cavity

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:



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Polyisocyanate Prepolymer based on MDI (67815-87-6)	
ATE US (dust, mist)	1.50 mg/l/4h
Polymeric Diphenylmethane Diisocyanate (pMDI) (9016-87-9)	
LD50 Oral Rat	49000 mg/kg
LD50 Dermal Rat	> 9400 mg/kg
LC50 Inhalation Rat	490 mg/m ³ (Exposure time: 4 h)
4,4'-Methylenediphenyl diisocyanate (101-68-8)	
LD50 Oral Rat	31600 mg/kg
LD50 Dermal Rabbit	> 9400 mg/kg
ATE US (dust, mist)	1.50 mg/l/4h
Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)	
LD50 Oral Rat	> 7400 mg/kg
LD50 Dermal Rabbit	> 6200 mg/kg
LC50 Inhalation Rat	0.369 mg/l/4h
Additive (Trade Secret)	
ATE US (dermal)	1,100.00 mg/kg body weight
Polymeric Diphenylmethane Diisocyanate (pMDI) (9016-87-9)	
IARC Group	3
4,4'-Methylenediphenyl diisocyanate (101-68-8)	
IARC Group	3
Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)	
IARC Group	3

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Ecotoxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).

Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)	
NOEC (acute)	>= 1000 mg/kg (Exposure time: 14 Days - Species: Eisenia foetida [soil dry weight])

Persistence and Degradability

Gorilla Glue	
Persistence and Degradability	Biodegradation for this product was 0%, exposure time: 28 days, i.e. not degradable.
Biodegradation	0 % after 28 days

Bioaccumulative Potential

Gorilla Glue	
BCF fish 1	< 1 Oncorhynchus mykiss (rainbow trout), Exposure time: 112 d (does not bioaccumulate)
Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)	
BCF Fish 1	3 - 14
Log Pow	4.5

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Sewage Disposal Recommendations: Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.



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SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT Not regulated for transport

In Accordance with IMDG Not regulated for transport

In Accordance with IATA Not regulated for transport

In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Gorilla Glue	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Polyisocyanate Prepolymer based on MDI (67815-87-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Polymeric Diphenylmethane Diisocyanate (pMDI) (9016-87-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %
4,4'-Methylenediphenyl diisocyanate (101-68-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %
Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Gorilla Glue	
State or local regulations	
This product contains a trace (ppm) amount of phenyl isocyanate (CAS # 103-71-9) and monochlorobenzene (CAS # 108-90-7) as impurities. California Prop 65: Warning! This product contains chemical(s) known to the State of California to be Carcinogenic.	
Weight %	Component CAS #
<1 ppm	Acetaldehyde 75-07-0
1-5 ppm	Furan 100-00-9
<1 ppm	Propylene Oxide 75-56-9
Polymeric Diphenylmethane Diisocyanate (pMDI) (9016-87-9)	
U.S. - New Jersey - Right to Know Hazardous Substance List	
4,4'-Methylenediphenyl diisocyanate (101-68-8)	
U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List	
Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)	
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List	

Canadian Regulations

Gorilla Glue	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects



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Polyisocyanate Prepolymer based on MDI (67815-87-6)

Listed on the Canadian DSL (Domestic Substances List)

Polymeric Diphenylmethane Diisocyanate (pMDI) (9016-87-9)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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4,4'-Methylenediphenyl diisocyanate (101-68-8)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 0.1 %

WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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Diphenylmethane Diisocyanate (MDI) Mixed Isomers (26447-40-5)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/21/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Resp. Sens. 1	Respiratory sensitisation Category 1
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H320	Causes eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation



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H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure

Party Responsible for the Preparation of This Document

The Gorilla Glue Company

+1 513-271-3300

The information presented in this Safety Data Sheet was prepared by qualified personnel and to the best of our knowledge is true and accurate. The information and recommendations are furnished for this product with the understanding that the purchaser will independently determine the suitability of the product for this purpose. This data does not constitute a warranty, expressed or implied, statutory or otherwise, nor is it representation for which The Gorilla Glue Company assumes legal responsibility. The data is submitted for the user's information and consideration only. Any use of this product must be determined by the user to be in accordance with applicable federal, state, provincial and local laws and regulations.

Gorilla Glue NA GHS SDS



Revision Number: 003.0

Issue date: 02/21/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE® 2033™ GEL THREADLOCKER	IDH number:	1029050
Product type:	Anaerobic	Item number:	1029050
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067	Region:	United States
		Contact information:	Telephone: 860.571.5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state:	Gel, Liquid	HEALTH:	*2
Color:	Blue	FLAMMABILITY:	2
Odor:	Mild	PHYSICAL HAZARD:	1
		Personal Protection:	See MSDS Section 8

WARNING: CAUSES EYE IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Eyes, Skin, Lungs

Potential Health Effects

Inhalation:	May cause irritation to nose and throat.
Skin contact:	Causes skin irritation. May cause allergic skin reaction.
Eye contact:	Contact with eyes will cause irritation. Mild eye irritation.
Ingestion:	May be harmful if swallowed.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Polyglycol dimethacrylate	25852-47-5	60 - 100
Dibutyl phthalate	84-74-2	10 - 30
Cellulose ester	9004-36-8	5 - 10
Saccharin	81-07-2	1 - 5
Silica, amorphous, fumed, crystal-free	112945-52-5	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5
Propane-1,2-diol	57-55-6	1 - 5
1-Acetyl-2-phenylhydrazine	114-83-0	0.1 - 1
Cumene	98-82-8	0.1 - 1

4. FIRST AID MEASURES

Inhalation:	Move to fresh air. If symptoms develop and persist, get medical attention.
Skin contact:	If symptoms develop and persist, get medical attention. Wash with soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse.
Eye contact:	Get medical attention. Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time.
Ingestion:	Do not induce vomiting. Keep individual calm. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash point:	> 93 °C (> 199.4 °F) Pensky Martens closed cup
Autoignition temperature:	Not available.
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Extinguishing media:	Foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
Unusual fire or explosion hazards:	None
Hazardous combustion products:	Oxides of carbon. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Ensure adequate ventilation. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Do not breathe gas/fumes/vapor/spray.
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Storage:

For safe storage, store at or below 38 °C (100.4 °F)
Store away from ignition sources.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Dibutyl phthalate	5 mg/m ³ TWA	5 mg/m ³ TWA	None	None
Cellulose ester	None	None	None	None
Saccharin	None	None	None	None
Silica, amorphous, fumed, crystal-free	10 mg/m ³ TWA Inhalable dust. 3 mg/m ³ TWA Respirable fraction.	20 MPPCF TWA 0.8 mg/m ³ TWA	None	None
Cumene hydroperoxide	None	None	(SKIN) 1 ppm (6 mg/m ³) TWA	None
Propane-1,2-diol	None	None	10 mg/m ³ TWA Aerosol.	None
1-Acetyl-2-phenylhydrazine	None	None	None	None
Cumene	50 ppm TWA	50 ppm (245 mg/m ³) TWA (SKIN)	None	None

Engineering controls:

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection:

Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection:

Safety goggles or safety glasses with side shields.

Skin protection:

Natural rubber gloves. Butyl rubber gloves. Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Gel, Liquid
Color:	Blue
Odor:	Mild
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	< 5 mm hg
Boiling point/range:	> 149 °C (> 300.2 °F)
Melting point/ range:	Not available.
Specific gravity:	1.0861
Vapor density:	Not available.
Flash point:	> 93 °C (> 199.4 °F) Pensky Martens closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.1 %; 1.06 g/l

10. STABILITY AND REACTIVITY

Stability:	Stable
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Oxides of carbon. Irritating organic vapours.
Incompatible materials:	Strong alkalis. Other polymerization initiators. Amines. Strong oxidizing agents. Strong reducing agents.
Conditions to avoid:	See "Handling and Storage" (Section 7) and "Incompatibility" (Section 10).

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Dibutyl phthalate	No	No	No
Cellulose ester	No	No	No
Saccharin	No	No	No
Silica, amorphous, fumed, crystal-free	No	No	No
Cumene hydroperoxide	No	No	No
Propane-1,2-diol	No	No	No
1-Acetyl-2-phenylhydrazine	No	No	No
Cumene	No	Group 2B	No

Hazardous components	Health Effects/Target Organs
Polyglycol dimethacrylate	Irritant, Allergen
Dibutyl phthalate	Central nervous system, Developmental, Irritant, Reproductive
Cellulose ester	No Target Organs
Saccharin	No Target Organs
Silica, amorphous, fumed, crystal-free	Nuisance dust
Cumene hydroperoxide	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Propane-1,2-diol	Irritant
1-Acetyl-2-phenylhydrazine	Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity
Cumene	Central nervous system, Irritant, Lung

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	Environmentally hazardous substances, liquid, n.o.s. (Di-n-butyl phthalate)
Hazard class or division:	9
Identification number:	UN 3082
Packing group:	III
Marine pollutant:	Di-n-butyl phthalate
DOT Reportable quantity:	Dibutyl phthalate, alpha,alpha-Dimethylbenzylhydroperoxide

International Air Transportation (ICAO/IATA)

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Di-n-butyl phthalate)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Marine pollutant: Di-n-butyl phthalate

15. REGULATORY INFORMATION**United States Regulatory Information**

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus
CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Delayed Health, Immediate Health
CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Dibutyl phthalate (CAS# 84-74-2). Cumene hydroperoxide (CAS# 80-15-9). Dibutyl phthalate (CAS# 84-74-2) 10 lbs. (4.54 kg)
CERCLA Reportable quantity: Dibutyl phthalate (CAS# 84-74-2) 10 lbs. (4.54 kg)
California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class: D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: 1, 3, 8, 11

Prepared by: Kyra Kozak Woods, Manager, Regulatory Affairs

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This safety data sheet has been prepared in accordance with the requirements of EC Directives 1999/45/EC and 2001/58/EC and provides information relating to the safe handling and use of the product.

1. PRODUCT AND COMPANY INFORMATION

Product Code	0158308
Trade Name	Super Glue
Manufacturer/Supplier	Henkel Loctite Adhesives Ltd.
Address	Watchmead, Welwyn Garden City, Herts., AL71JB. UK
Phone Number	01 707 358800
Fax Number	01 707 358900
Emergency Phone Number	+353-1-4599301/+353-87-2629625/+353-1-4046444

2. COMPOSITION / INFORMATION ON INGREDIENTS

Nature Cyanoacrylate adhesive.

Hazardous Components in Product for EC

Component Name	CAS / EINEC Concentration	R Phrases	Classification
Ethyl Cyanoacrylate	7085-85-0 230- 75.00 - 95.00 391-5	R36/37/38	Xi

3. HAZARD IDENTIFICATION

Irritating to eyes, respiratory system and skin. Bonds skin and eyes in seconds. Highly reactive to water. (See Section 4 on first aid).

4. FIRST AID MEASURES

First Aid - Inhalation

Remove affected person to fresh air, and if still feeling unwell seek medical attention.

First Aid - Skin

Do not pull bonded skin apart. It may be gently peeled apart using a blunt object such as a spoon, preferably after soaking in warm soapy water. Cyanoacrylates give off heat on solidification. In rare cases a large drop will generate enough heat to cause a burn. Burns should be treated normally after the adhesive has been removed from the skin.

If lips are accidentally stuck together apply warm water to the lips and encourage maximum wetting and pressure from saliva inside the mouth. Peel or roll lips apart. Do not try to pull the lips apart with direct opposing action.

First Aid - Eyes

If the eye is bonded closed, release eyelashes with warm water by covering with wet pad. Cyanoacrylate will bond to eye protein and will cause periods of weeping which will help to debond the adhesive. Keep eye covered until debonding is complete, usually within 1-3 days. Do not force eye open. Medical advice should be sought in case solid particles of cyanoacrylate trapped behind the eyelid cause any abrasive damage.

First Aid - Ingestion

Ensure that breathing passages are not obstructed. The product will polymerise immediately in the mouth making it almost impossible to swallow. Saliva will slowly separate the solidified product from the mouth (several hours).

5. FIRE FIGHTING MEASURES

Non flammable product (flash point is greater than 80°C (CC)). If product is involved in fire extinguish with dry powder, foam or carbon dioxide. Trace amounts of toxic fumes may be

5. FIRE FIGHTING MEASURES

released on incineration and the use of breathing apparatus is recommended.

6. ACCIDENTAL RELEASE MEASURES

Ventilate area. Do not use cloths for mopping up. Polymerise with water and scrape off floor.

7. HANDLING AND STORAGE

Handling

Ventilation (low level) is recommended when using large volumes. Use of dispensing equipment is recommended to minimise the risk of skin or eye contact.

Storage

Store in a dry and cool place. For optimum shelf life store in original containers under refrigerated conditions at 2°C to 8°C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits**Ethyl Cyanoacrylate**

ACGIH: TLV 0ppm 8h TWA.

HSA (1999) C.O.P : OEL 2ppm (8mg/m³) 8h TWA.HSA (1999) C.O.P : OEL 4ppm (16mg/m³) 15 min exposure limit.

The TLV for ethyl cyanoacrylate is 0.2ppm(ACGIH, TWA).

Polyethylene or polypropylene gloves are recommended when using large volumes. Do not use PVC, rubber, nylon or cotton gloves. Eye protection should be used where there is any risk of splashing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid.
Colour	Clear Colourless.
Odour	Sharp. Characteristic.
pH	Not applicable.
Boiling Range/Point (°C)	Boils above 100.
Flash Point (CC) (°C)	Exceeds 80.
Specific Gravity	1.1 g/ccm at 20 °C.
Solubility in Water (kg/m³)	Immiscible. Reacts with water.
Solubility in Acetone	Soluble
Vapour Pressure (mmHg @25°C)	Less than 0.5 at 25 °C.
Explosion Limits (%)	Not determined.

10. STABILITY AND REACTIVITY

Polymerisation will occur in the presence of moisture.

May polymerise if exposed to alkalis. acids. heat. catalysts. peroxides. free radical initiators.

11. TOXICOLOGICAL INFORMATION

Inhalation

Irritating to respiratory system. Prolonged exposure to high concentrations of vapours may lead to chronic effects in sensitive individuals. In dry atmosphere with < 50% humidity, vapours may irritate the eyes and respiratory system.

11. TOXICOLOGICAL INFORMATION

Skin

Irritating to the skin. Bonds skin in seconds. Considered to be of low toxicity: acute dermal LD50 (rabbit)>2000mg/kg. Due to polymerisation at the skin surface allergic reaction is not considered possible.

Eyes

This product is an irritant to the eyes. Liquid product will bond eyelids. In a dry atmosphere (RH<50%) vapours may cause irritation and lachrymatory effect.

Ingestion

Cyanoacrylates are considered to have relatively low toxicity. Acute oral LD50 is >5000mg/kg (rat). It is almost impossible to swallow as it rapidly polymerises in the mouth.

12. ECOLOGICAL INFORMATION

Biodegradable product of low ecotoxicity. Does not contain and is not manufactured with any of the substances listed on the Montreal protocol.

13. DISPOSAL CONSIDERATIONS

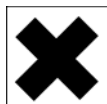
Dispose of in accordance with local and national regulations. Polymerise by adding slowly to water (10:1). Dispose of as water insoluble non-toxic solid chemical in authorised landfill or incinerate under controlled conditions.

14. TRANSPORT INFORMATION

UN Number	3334
Air (IATA)	Aviation regulated liquids, n.o.s (Cyanoacrylate Ester). , Class 9, Packaging Group - Maximum quantity, cargo aircraft: 220 l Maximum quantity, passenger aircraft: 100 l
Sea (IMO)	Not applicable.
Road (ADR)/Rail (RID)	Not applicable.

15. REGULATORY INFORMATION

Contains	Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
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Labelling Information

Irritant

R phrases

R36/37/38 Irritating to eyes, respiratory system and skin.

S phrases

S23 Do not breathe vapour.
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

15. REGULATORY INFORMATION

Voluntary Labelling -**16. OTHER INFORMATION**

MSDS data revised 26 March 2003**Hazardous Components in Product for EC****Component Name**Ethyl Cyanoacrylate
R36/37/38**R Phrases**

R36/37/38

R36/37/38 Irritating to eyes, respiratory system and skin.

Prepared by:

Dr Hanns Misiak
HRA Specialist
Health & Regulatory Affairs - Europe

Further Information may be obtained from:-

Loctite Corporation,
Health and Regulatory Affairs - Europe,
Tallaght Business Park,
Whitestown,
Dublin 24,
Ireland.Tel: +353-1-4046444.
Fax: +353-1-4510806.

The information in this safety data sheet was obtained from reputable sources and to the best of our knowledge is accurate and current at the mentioned date.

Neither Loctite nor its subsidiary companies accept any liability arising out of the use of the information provided here or the use, application or processing of the product(s) described herein.

Attention of users is drawn to the possible hazards from improper use of the product(s).

This safety data sheet was prepared in accordance with Commission Directive 2001/59/EC adapting to technical progress for the 28th time Council Directive 67/548/EEC and Commission Directive 1999/45/EC.



SAFETY DATA SHEET

Issuing Date January 5, 2015

Revision Date New

Revision Number 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Clorox Commercial Solutions® Formula 409® Glass & Surface Cleaner**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Glass and surface cleaner

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address

Clorox Professional Products Company
1221 Broadway
Oakland, CA 94612

Phone: 1-510-271-7000

Emergency telephone number

Emergency Phone Numbers For Medical Emergencies call: 1-800-446-1014
For Transportation Emergencies, call Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

GHS Label elements, including precautionary statements

Emergency Overview

This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Appearance Clear, blue

Physical State Thin liquid

Odor Citrus, floral, powdery

Precautionary Statements - Prevention

None

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0.1% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May cause slight eye irritation.

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product contains no substances that at their given concentrations are considered to be hazardous to health.

4. FIRST AID MEASURES

First aid measures

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Hold eye open and rinse slowly and gently with water for 15–20 minutes. If present, remove contact lenses after the first 5 minutes of rinsing, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin Contact	Rinse skin with plenty of water. If irritation persists, call a doctor.
Inhalation	Move to fresh air. If breathing problems develop, call a doctor.
Ingestion	Drink a glassful of water. Call a doctor or poison control center.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects	May cause slight eye irritation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

Hazardous Combustion Products

Oxides of carbon.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Avoid contact with eyes.
Other Information	Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental Precautions	See Section 12 for additional ecological information.
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Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Absorb and containerize. Wash residual down to sanitary sewer. Contact the sanitary treatment facility in advance to assure ability to process washed-down material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin, and clothing. Do not eat, drink, or smoke when using this product.
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Conditions for safe storage, including any incompatibilities

Storage	Keep containers tightly closed.
Incompatible Products	None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	This product does not contain any ingredients with occupational exposure limits that are at concentrations below their cut-off values/concentrations and that contribute to the hazard classification of the product.
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Appropriate engineering controls

Engineering Measures	Showers Eyewash stations Ventilation systems
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	No special protective equipment required.
Skin and Body Protection	No special protective equipment required.
Respiratory Protection	No protective equipment is needed under normal use conditions. If irritation is experienced, ventilation and evacuation may be required.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Thin liquid	Odor	Citrus, floral, powdery
Appearance	Clear	Odor Threshold	No information available
Color	Blue		

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
pH	9 - 11.5	None known
Melting/freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	None known
Lower flammability limit	No data available	None known
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	~1.0	None known
Water Solubility	Complete	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive Properties	Not explosive	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None known.

Conditions to avoid

None known.

Incompatible materials

None known.

Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Exposure to vapor or mist may irritate respiratory tract.
Eye Contact	May cause slight irritation.
Skin Contact	May cause slight irritation.
Ingestion	Ingestion may cause slight irritation to mucous membranes and gastrointestinal tract.

Information on toxicological effects

Symptoms May cause slight redness and tearing of eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients listed as a carcinogen.
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic Toxicity	No known effect based on information supplied.
Target Organ Effects	None known.
Aspiration Hazard	Not an aspiration hazard.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No information available.

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Dispose of in accordance with all applicable federal, state, and local regulations.

Contaminated Packaging

Do not reuse empty containers. Dispose of in accordance with all applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

DOT Not regulated.

TDG Not regulated.

ICAO Not regulated.

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

Chemical Inventories

TSCA All components of this product are either on the TSCA 8(b) Inventory or otherwise exempt from listing.

DSL/NDSL All components are on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.



SAFETY DATA SHEET

Issuing Date January 5, 2015

Revision Date New

Revision Number 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Clorox Commercial Solutions® Pine-Sol® Multi-Surface Cleaner**

Other means of identification

EPA Registration Number 5813-101-67619

Recommended use of the chemical and restrictions on use

Recommended Use General purpose cleaner and disinfectant

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address

Clorox Professional Products Company
1221 Broadway
Oakland, CA 94612

Phone: 1-510-271-7000

Emergency telephone number

Emergency Phone Numbers For Medical Emergencies call: 1-800-446-1014
For Transportation Emergencies, call Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This mixture is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 3
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GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Warning
Hazard statements Causes mild skin irritation	No pictogram required.
Appearance Clear, amber	Physical State Slightly viscous liquid
	Odor Pine

Precautionary Statements - Prevention

None

Precautionary Statements - Response

If skin irritation occurs: Get medical advice.

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

6.8% of the mixture consists of ingredient(s) of unknown toxicity

Other information

No information available.

Interactions with Other Chemicals

May react with bleach-containing products or other household cleaners to produce hazardous gases.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade Secret
Alcohols, C10-14, ethoxylated	66455-15-0	3 - 7	*
Glycolic acid	79-14-1	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation occurs, get medical advice.
Inhalation	Move to fresh air. If breathing is affected, call a doctor.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glassful of water if able to swallow. DO NOT induce vomiting unless told to do so by a poison control center or doctor.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects Mild irritation of eyes and skin.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available

Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes and skin.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental Precautions See Section 12 for additional ecological Information

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Absorb and containerize. Wash residual down to sanitary sewer. Contact the sanitary treatment facility in advance to assure ability to process washed-down material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin, and clothing. Do not eat, drink, or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool, and well-ventilated place.

Incompatible Products Products containing bleach and other household cleaners.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Alcohols, C10-14, ethoxylated 66455-15-0	None	None	None
Glycolic acid 79-14-1	None	None	None

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection	If splashes are likely to occur, wear safety glasses with side-shields. None required for consumer use.
Skin and Body Protection	No special protective equipment required.
Respiratory Protection	If irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures	Remove and wash contaminated clothing before re-use. Avoid contact with skin, eyes, or clothing. Do not eat, drink, or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical and Chemical Properties**

Physical State	Slightly viscous liquid		
Appearance	Clear	Odor	Pine
Color	Amber	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
pH	2 - 3	None known
Melting/freezing point	No data available	None known
Boiling Point/Range	No data available	None known
Flash Point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	None known
Lower flammability limit	No data available	None known
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	~1.0	None known
Water Solubility	Soluble in water.	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	~15 cP	None known
Explosive Properties	Not explosive	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

10. STABILITY AND REACTIVITY

Reactivity

May react with bleach-containing products or other household cleaners to produce hazardous gases.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

None known.

Incompatible materials

Products containing bleach and other household cleaners.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Exposure to vapor or mist may irritate respiratory tract.
Eye Contact	May cause eye irritation.
Skin Contact	Prolonged contact may cause irritation.
Ingestion	Ingestion may cause irritation to mucous membranes and gastrointestinal irritation, nausea, vomiting, and diarrhea.

Component information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glycolic acid 79-14-1	-	-	7.7 mg/L (Rat, 4 h)

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes and skin redness.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive Toxicity	No information available
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic Toxicity	Carcinogenic potential is unknown.
Target Organ Effects	Respiratory system, eyes, skin, gastrointestinal tract (GI).

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No information available.

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Dispose of in accordance with all applicable federal, state, and local regulations.

Contaminated Packaging

Do not reuse empty containers. Dispose of in accordance with all applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

ICAO Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

Chemical Inventories

TSCA All components of this product are either on the TSCA 8(b) Inventory or otherwise exempt from listing.

DSL/NDSL All components are on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

EPA Statement

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION: Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**International Regulations****Canada****WHMIS Hazard Class**

D2B Toxic Materials

**16. OTHER INFORMATION**

NFPA	Health Hazard 1	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 1	Flammability 0	Physical Hazard 0	Personal Protection A

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Preparation/Revision Date	January 5, 2015
Revision Date	New
Revision Note	New
Reference	1103448/183922.001/1092238-A

General Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® ORIGINAL GLASS CLEANER WITH AMMONIA-D®

Version 1.1

Print Date 03/04/2015

Revision Date 02/25/2015

SDS Number 350000014153

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name : WINDEX® ORIGINAL GLASS CLEANER WITH AMMONIA-D®

Recommended use : Hard Surface Cleaner

Manufacturer, importer, supplier : S.C. Johnson & Son, Inc.
1525 Howe Street
Racine WI 53403-2236

Telephone : +18005585252
Emergency telephone number : 24 Hour Medical Emergency Phone: (866)231-5406
24 Hour International Emergency Phone: (703)527-3887
24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification

This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.

Labelling

Precautionary statements

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain hazardous chemicals at or above a reportable level as defined by OSHA 29 CFR 1910.1200

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

4. FIRST AID MEASURES

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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- Eye contact** : No special requirements
- Skin contact** : No special requirements
- Inhalation** : No special requirements.
- Ingestion** : No special requirements

5. FIREFIGHTING MEASURES

- Suitable extinguishing media** : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Specific hazards during firefighting** : Container may melt and leak in heat of fire.
- Further information** : Fight fire with normal precautions from a reasonable distance. Standard procedure for chemical fires. Wear full protective clothing and positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Wash thoroughly after handling.
- Environmental precautions** : Outside of normal use, avoid release to the environment.
- Methods and materials for containment and cleaning up** : Dike large spills.
Clean residue from spill site.

7. HANDLING AND STORAGE

- Handling**
- Precautions for safe handling** : Avoid contact with skin, eyes and clothing.
For personal protection see section 8.
KEEP OUT OF REACH OF CHILDREN AND PETS.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® ORIGINAL GLASS CLEANER WITH AMMONIA-D®

Version 1.1

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Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers : Keep container closed when not in use.

Other data : Stable under normal conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Personal protective equipment

Respiratory protection : No special requirements.

Hand protection : No special requirements.

Eye protection : No special requirements.

Skin and body protection : No special requirements.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid

Color : blue

Odor : pleasant

Odour Threshold : Test not applicable for this product type

pH : 10.7

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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at (25 C)

- Melting point/freezing point** : 0 C
- Initial boiling point and boiling range** : 100 C
- Flash point** : > 93 °C
> 199.4 °F
Approximate
- Evaporation rate** : No data available
- Flammability (solid, gas)** : Does not sustain combustion.
- Upper/lower flammability or explosive limits** : No data available
- Vapour pressure** : No data available
- Vapour density** : No data available
- Relative density** : 1.00 g/cm³ at 25 C
- Solubility(ies)** : soluble
- Partition coefficient: n-octanol/water** : No data available
- Auto-ignition temperature** : No data available
- Decomposition temperature** : No data available

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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- Viscosity, dynamic** : No data available
- Viscosity, kinematic** : No data available
- Oxidizing properties** : No data available
- Volatile Organic Compounds** : 0.2 % - additional exemptions may apply
Total VOC (wt. %)* *as defined by US Federal and State Consumer Product Regulations
- Other information** : None identified :

10. STABILITY AND REACTIVITY

- Possibility of hazardous reactions** : If accidental mixing occurs and toxic gas is formed, exit area immediately. Do not return until well ventilated.
- Conditions to avoid** : Direct sources of heat.
- Incompatible materials** : Do not mix with bleach or any other household cleaners. Strong bases
- Hazardous decomposition products** : Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

- Emergency Overview** : This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.
- Acute oral toxicity** : LD50 estimated

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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> 5,000 mg/kg

Acute inhalation toxicity : LC50
estimated
> 2.58 mg/l

Acute dermal toxicity : LD50
estimated
> 5,000 mg/kg

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	-
Skin corrosion/irritation	No classification proposed	-
Serious eye damage/eye irritation	No classification proposed	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single exposure	No classification proposed	-
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : None known.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity

The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

No environmental data required.

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

Land transport

Not classified as dangerous in the meaning of transport regulations.

Sea transport

Not classified as dangerous in the meaning of transport regulations.

Air transport

Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

Notification status : All ingredients of this product are listed or are excluded from

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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listing on the U.S. Toxic Substances Control Act (TSCA)
Chemical Substance Inventory.

Notification status : All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Ratings

Health	1
Flammability	2
Reactivity	0

NFPA Ratings

Health	1
Fire	2
Reactivity	0
Special	-

This information is being provided in accordance with the Occupational Safety and Health Administration (OSHA) regulation (29 CFR 1910.1200). The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® ORIGINAL GLASS CLEANER WITH AMMONIA-D®

Version 1.1

Print Date 03/04/2015

Revision Date 02/25/2015

SDS Number 350000014153

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)
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AJAX CLEANSING POWDER-REGULAR

This industrial Safety Data Sheet is not intended for consumers and does not address consumer use of the product. For information regarding consumer applications of this product, refer to the product label.

Version 1.0

SDS Number: 660000000394

Revision Date: 05/22/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **AJAX CLEANSING POWDER-REGULAR**

Product code : 200000017779

: B01801470002

Manufacturer or supplier's details

Company : Colgate-Palmolive Co
300 Park Avenue
New York, NY 10022

Telephone : US: Consumer Affairs - 1-800-468-6502

Emergency telephone number : For emergencies involving spill, leak, fire, exposure or accident call CHEMTREC (24hr) at (800) 424-9300 or (703) 527-3887.

Medical Emergency (24HR): For MEDICAL EMERGENCIES involving this product call: (888) 489-3861

Recommended use of the chemical and restrictions on use

Recommended use : Formulated all purpose cleaner for household use.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	powder
Colour	white

GHS Classification

Acute toxicity (Inhalation) : Category 4

GHS Label element

Hazard pictograms :



Signal word : Warning

Hazard statements : H332 Harmful if inhaled.

Precautionary statements : **Prevention:**

AJAX CLEANSING POWDER-REGULAR

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P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P271 Use only outdoors or in a well-ventilated area.

Response:

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

Potential Health Effects

Inhalation : No adverse effects due to inhalation are expected.

Skin : May cause skin irritation upon prolonged contact.

Eyes : Causes eye irritation on direct contact.

Ingestion : May be harmful if swallowed in large quantities.

Aggravated Medical Condition : None known.

Carcinogenicity:

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
LIMESTONE	1317-65-3	>= 90 - <= 100
SODIUM CARBONATE	497-19-8	>= 5 - < 10

SECTION 4. FIRST AID MEASURES

If inhaled : Remove victim to fresh air. Get medical attention, if symptoms persist.

In case of skin contact : Flush skin with large amounts of water. If irritation develops



AJAX CLEANSING POWDER-REGULAR

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		TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA (Total dust)	15 mg/m ³	OSHA P0
		TWA (respirable dust fraction)	5 mg/m ³	OSHA P0

Engineering measures : In an industrial work environment, no special precautions or control measures are required.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Protective measures : In an industrial work environment, if a splash is likely, chemical goggles may be needed. Prolonged skin contact may require protective gloves. For consumer use, no unusual precautions are necessary.

Hygiene measures : In an industrial work environment, avoid eye and prolonged skin contact.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder
 Colour : white
 pH : 9.5
 Flash point : Not applicable
 Density : 1.04 g/cm³

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reac- : Hazardous polymerisation does not occur.

AJAX CLEANSING POWDER-REGULAR

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tions

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : 1.63 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

LIMESTONE:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420

Acute inhalation toxicity : LC50 (Rabbit): > 3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

SODIUM CARBONATE:

Acute oral toxicity : LD50 (Rat): 2,800 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): 2.3 mg/l
Exposure time: 2 h
Test atmosphere: No information available.
Method: No information available.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: No information available.

Skin corrosion/irritation

Not classified based on available information.

Components:

LIMESTONE:

Result: No skin irritation

AJAX CLEANSING POWDER-REGULAR

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SODIUM CARBONATE:

Remarks: No data available

Serious eye damage/eye irritation

Not classified based on available information.

Components:

LIMESTONE:

Result: No eye irritation

SODIUM CARBONATE:

Result: Irritation to eyes, reversing within 21 days

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

LIMESTONE:

Exposure routes: Inhalation

Result: Does not cause respiratory sensitisation.

Exposure routes: Dermal

Result: Does not cause skin sensitisation.

SODIUM CARBONATE:

Exposure routes: Inhalation

Remarks: No data available

Exposure routes: Dermal

Remarks: No data available

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

AJAX CLEANSING POWDER-REGULAR

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SDS Number: 660000000394

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Remarks: This product has not been tested as a whole. However, this formula was reviewed by expert toxicologists in the Product Safety Assurance Department of Colgate-Palmolive and is determined to be safe for its intended use. This review has taken into consideration available safety-related information including information on individual ingredients, similar formulas and potential ingredient interactions. This review is a component of the hazard determination used to prepare the statements in Section 3 of the SDS.

SECTION 12. ECOLOGICAL INFORMATION

The product has not been tested as a whole for environmental toxicity. However, environmental information on the ingredients in this product have been reviewed by the Environmental, Health and Safety group of Colgate-Palmolive and determined to have an acceptable environmental profile. This evaluation is based on available information on individual ingredients, interactions of ingredients, and similar ingredients. Biodegradability claims are supported by data on ingredients (i.e., surfactants are biodegradable) or testing conducted on the final product (i.e., This product is biodegradable).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environment agency for specific rules). Do not dump in sewers, any body of water or on the ground.

SECTION 14. TRANSPORT INFORMATION

DOT : Not regulated.

TDG : Not regulated.

IATA : Not regulated.

IMDG : Not regulated.

International Regulation

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity



AJAX CLEANSING POWDER-REGULAR

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Version 1.0

SDS Number: 660000000394

Revision Date: 05/22/2015

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM DODECYL BENZENE SULFONATE	25155-30-0	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SULFUR DIOXIDE	7446-09-5	500	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

SODIUM DODECYL 25155-30-0
BENZENE
SULFONATE

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

SODIUM DODECYL 25155-30-0
BENZENE
SULFONATE

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

Massachusetts Right To Know

LIMESTONE 1317-65-3
SODIUM DODECYL BENZENE 25155-30-0
SULFONATE
SULFUR DIOXIDE 7446-09-5

Pennsylvania Right To Know

LIMESTONE 1317-65-3
SODIUM CARBONATE 497-19-8
SODIUM DODECYL BENZENE 25155-30-0
SULFONATE

AJAX CLEANSING POWDER-REGULAR

This industrial Safety Data Sheet is not intended for consumers and does not address consumer use of the product. For information regarding consumer applications of this product, refer to the product label.

Version 1.0

SDS Number: 660000000394

Revision Date: 05/22/2015

SODIUM SULFATE 7757-82-6
SULFUR DIOXIDE 7446-09-5

New Jersey Right To Know

LIMESTONE 1317-65-3
SODIUM CARBONATE 497-19-8
SODIUM DODECYL BENZENE 25155-30-0
SULFONATE

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : All ingredients in this product are listed on the TSCA Inventory or are not required to be listed on the TSCA Inventory.

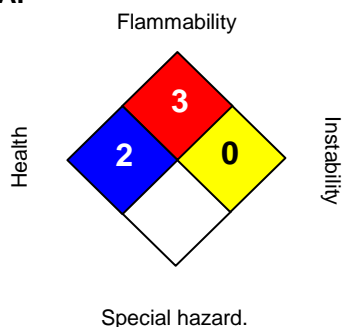
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Disclaimer: The information on this sheet is limited to the material identified and is believed by the Colgate-Palmolive Company to be correct based on its knowledge and information as of the date noted. Colgate makes no representation, guarantee or warranty, expressed or implied, as to the accuracy, reliability or completeness of the information and assumes no responsibility for injury, damage or loss resulting from the use of the material.



Consumer Information Sheet for **Fluorescent Hi-Liter[®] markers**

This product is labeled in accordance with the chronic hazard labeling standard, ASTM D-4236 and is considered a nonhazardous article as defined by 29 CFR Part 1910.1200 (c). This product has been evaluated in a program of toxicological evaluation by a medical expert and certified to be nontoxic. This product does not contain sufficient quantities of materials to be toxic or injurious to humans or to cause acute or chronic health problems when used for its normal and intended purpose.

Manufacturer:

Avery Dennison
Office Products North America
Markers and Adhesives
20955 Pathfinder Road
Diamond Bar, CA 91765
Phone: 615-456-8219 (8 am-5 pm CDT M-F)

Hazard Information: The normal and intended use of this product is as a writing instrument and does not include consumption or skin contact.

Storage and Disposal Information: Markers should be retained in original, unopened package if being stored for long periods of time. Markers are stable when stored as recommended and will not decompose under normal conditions. Clean ink spills with absorbent material and dispose of as solid waste in accordance with all federal, state, and local regulations.

Technical Information: For detailed toxicological and/or ecological data on the individual ink components contained in this product, write or call the address or phone number shown above.

Disclaimer of Liability: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards may be described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of this material is the sole responsibility of the user. No representations or warranties, either expressed or implied, of MERCHANTABILITY, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the material to which the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.



Office Products North America
Markers and Adhesives
20955 Pathfinder Road
Diamond Bar, CA 91765
Phone: 615-456-8219 (8 am-5 pm CDT M-F)

SECTION I PRODUCT IDENTIFICATION**Avery Dennison Product: Marks-A-Lot Marker**

SECTION II HAZARDOUS INGREDIENT/IDENTITY INFORMATION

Material Name:	CAS #:	OSHA PEL (ppm):	ACGIH TLV (ppm):
n-Propanol	71-23-8	200	200

All of the chemicals listed above are in compliance with OSHA, CFR, 1910.1200. A finished marker contains a substantially lower percentage by weight of each chemical and has the ink held within an absorbent material so it will be released from the marker only through the writing nib.

SECTION III PHYSICAL DATA

Boiling Point: 208° F	Appearance: Colored liquid
Specific Gravity: .81 @ 20°C	Odor: Alcohol
Vapor Pressure (mmHg): 14	Water Solubility: Dispersible
Vapor Density (Air=1): 2.1	Evaporation Rate (Butyl Acetate=1): 1.10
Melting Point: N/AP	

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point: 74°F (method used - TCC)	Flammable Limits: 2.1-13.5%
Extinguishing Media: Water, foam, carbon dioxide, dry chemical	
Fire Fighting Procedure: Self-contained breathing apparatus for fire fighters, flood with water from a safe distance	
Unusual Hazards: Flammable and may be ignited by heat or flame	

SECTION V REACTIVITY DATA

Stability: Yes
Conditions to Avoid: Heat and flame
Incompatibility: Strong acids or bases, oxidizers, or halogens
Hazardous Decomposition: Carbon monoxide or carbon dioxide
Hazardous Polymerization: Will not occur

SECTION VI HEALTH HAZARD DATA**Symptoms of Overexposure for each Potential Route of Exposure -**

Inhaled - Excessive concentrations of vapors may cause irritation of nose and throat, may cause drowsiness, dizziness and fatigue

Eye Contact - Direct contact may cause eye irritation, burning, tearing, redness and swelling

Absorbed through Skin - Direct contact may cause redness, burning, drying, and cracking of the skin

Ingestion - N/AP

Health Effects or Risks from Exposure -

Medical Conditions Aggravated by Exposure: Chronic - N/AP Carcinogenic: No

This product contains materials that are listed on the following lists: NTP: No IARC: No OSHA: No

S.A.R.A. Information: This product is not reportable under SARA Title III, Section 313

Toxic Information: Non-toxic by ingestion per FHSA, Title 16, Chapter II

Emergency First Aid Procedures -

Eye Contact: Direct contact, flush with water for at least 15 minutes, seek medical attention

Skin Contact: Thoroughly wash with soap and water

Inhaled: Remove to fresh air, if symptoms persist, seek medical attention Ingestion: N/AP

SECTION VII PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures: N/AP

Waste Disposal: Dispose of in accordance with local, state, federal regulations

Storage: Store in a cool, dry place away from sources of ignition

SECTION VIII CONTROL MEASURES

Work Practices: Observe ordinary measures of personal hygiene

To the best of our knowledge this information is accurate; however, we do not, and cannot, warrant or guarantee its accuracy and cannot be liable for any damages, consequential or actual which might result from any reliance therein. This MSDS was prepared to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200).



Safety Data Sheet

The Armor All/STP Products Company

44 Old Ridgebury Road
Suite 300
Danbury, CT 06810
Tel. 1-203-205-2900

1. Product And Company Identification

Product Name: ARMOR ALL® Ultra Shine Protectant

Responsible Party: The Armor All/STP Products Company
44 Old Ridgebury Road
Suite 300
Danbury, CT 06810

Information Phone Number: +1 203-205-2900

Emergency Phone Number:

For Medical Emergencies, call 1-866-949-6465 / +1 303-389-1332 (Outside US and Canada)
For Transportation Emergencies, call 1-800-424-9300 (Chemtrec) +1-703-527-3887 for
Outside US and Canada (call collect)

SDS Date Of Preparation: 02/28/2015

Product Use and Uses Advised Against: Automotive maintenance product – For consumer and professional use

2. Hazards Identification

Note: This product is a consumer product and is labeled in accordance with the Consumer Product Safety Commission regulations and not OSHA regulations. The requirements for the labeling of consumer products take precedence over OSHA labeling so the actual product label will differ from the OSHA information shown below.

GHS Classification:

Physical:	Health:
Not Hazardous	Not Hazardous

GHS Label Elements: None

Hazards not otherwise specified: None

Percentage of unknown toxicity: N/a

3. Composition/Information On Ingredients

Component	CAS No.	Amount
Non-Hazardous Ingredients	Mixture	90> - 100%
Mineral Oil	8042-47-5	< 10%

The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

Inhalation: If symptoms of exposure develop, remove to fresh air. Seek medical attention if symptoms persist.

Skin Contact: Rinse skin with plenty of water. If skin irritation or redness develops, seek medical attention.

Eye Contact: Flush eyes with plenty of water. If irritation or other symptoms persist, seek medical attention.



Safety Data Sheet

The Armor All/STP Products Company

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Ingestion: Do not induce vomiting unless directed to by doctor or physician. If the victim is fully conscious, have them drink a glass of water. Get medical assistance by calling a doctor or poison center. Never give anything by mouth to a person who is unconscious or drowsy.

Most Important Symptoms: Direct eye contact may cause mild irritation.

Indication of Immediate Medical Attention/Special Treatment: Immediate medical attention should not be required.

5. Firefighting Measures

Suitable (and Unsuitable) Extinguishing Media: Use dry chemical, carbon dioxide, foam, or water spray.

Specific Hazards Arising from the Chemical: Closed containers may rupture if exposed to extreme heat. Thermal decomposition will generate oxides of carbon and silicon and formaldehyde.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate protective equipment.

Environmental Precautions: Prevent entry in storm sewers and waterways. Report spill as required by local and national regulations.

Methods for Containment and Clean-Up: Absorb with an inert material. Collect into a suitable container for disposal. Rinse area with water.

7. Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin and clothing. Wash hands after use. Keep out of the reach of children.

Conditions for Safe Storage, Including any Incompatibilities: No special storage required.

8. Exposure Controls / Personal Protection

Exposure Guidelines:

CHEMICAL	EXPOSURE LIMIT
Non-Hazardous Ingredients	None Established
Mineral Oil	5.0 mg/m ³ inhalable TWA ACGIH TLV 5.0 mg/m ³ TWA OSHA PEL

Engineering Controls: General ventilation should be adequate for all normal use.

Personal Protective Equipment



Safety Data Sheet

The Armor All/STP Products Company

44 Old Ridgebury Road
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Respiratory Protection: None required under normal use conditions.

Gloves: None required under normal use conditions.

Eye Protection: None required for normal use. Avoid eye contact.

Other Protective Equipment/Clothing: None required under normal use conditions.

9. Physical and Chemical Properties

Appearance and Odor: Opaque, white viscous liquid with a slight odor.

Physical State: Liquid	Odor Threshold: Not available
pH: 7.5 - 9.0	Specific Gravity: ~1
Initial Boiling Point/Range: Not determined	Vapor Pressure: Not determined
Melting/Freezing Point: Not determined	Vapor Density: Not determined
Solubility In Water: Easily soluble	Percent Volatile: >80%
Viscosity: ~ 3,000 cP	Evaporation Rate: Not determined
Coefficient Of Water/Oil Distribution: Not determined	VOC Content: Not determined
Flash Point: >212°F (>100°C)	Autoignition Temp: Not determined
Decomposition Temperature: Not determined	Flammability Limits: LEL: Not determined UEL: Not determined
Flammability (solid, gas): Not applicable	

10. Stability and Reactivity

Reactivity: Not normally reactive

Chemical Stability: Stable.

Possibility of Hazardous Reactions: None known

Conditions To Avoid: None known

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Thermal decomposition will generate oxides of carbon, silicon dioxide, and formaldehyde.

11. Toxicological Information

POTENTIAL HEALTH EFFECTS:

Acute Hazards:

Inhalation: No adverse effects expected from the normal use of this product.

Skin Contact: No adverse effects expected from the normal use of this product.

Eye Contact: Direct contact may cause slight eye irritation.

Ingestion: Swallowing may cause gastrointestinal disturbances.



Safety Data Sheet

The Armor All/STP Products Company

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Chronic Hazards: None currently known.

Carcinogenicity Listing: None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH or OSHA.

Acute Toxicity Values:

No data available for product.

Mineral Oil: LD50 Rat oral > 5,000 mg/kg
LD50 Rabbit dermal > 2,000 mg/kg
LC50 Rat inhalation > 5,000 mg/L/4 hr.

12. Ecological Information

Ecotoxicity:

No ecotoxicity data is currently available for product.

Mineral Oil: NOEL Oncorhynchus mykiss \geq 100 mg/L/96 hr.
NOEL Daphnia magna \geq 100 mg/L/96 hr.

Persistence and Degradability: No data available

Bio accumulative Potential: No data available

Mobility in Soil: No data available

Other Adverse Effects: No data available

13. Disposal Considerations

Dispose of in accordance with all local, state/provincial and federal regulations. Offer empty containers for recycling.

14. Transport Information

DOT Hazardous Materials Description: Not Regulated

Canadian TDG Hazardous Materials Description: Not Regulated

IMDG Dangerous Goods Description: Not Regulated

15. Regulatory Information

United States:

EPA TSCA INVENTORY: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.



Safety Data Sheet

The Armor All/STP Products Company

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CERCLA Section 103: This product has no RQ, however, oil spills must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Not hazardous

SARA 313: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

Canada:

Canadian WHMIS Classification: Not a controlled product.

Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian DSL.

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

16. Other Information

NFPA Rating (NFPA 704):	Health: 0	Fire: 0	Instability: 0
HMIS Rating:	Health: 0	Fire: 0	Physical Hazard: 0

REVISION SUMMARY: February 28, 2015 Update to GHS SDS format and name change: Changes to all sections.

DATA SUPPLIED IS FOR USE ONLY IN CONNECTION WITH OCCUPATIONAL SAFETY AND HEALTH



Revision date: Initial version
Date of issue: 05.20.2015

Page: 1/10

Trade name:	IDEAL Wipes Multi-purpose wipes
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SECTION 1: Identification

Product identifier: IDEAL Wipes Multi-purpose wipes.
Synonyms: None available.
Product Code Number: 38-500.
SDS number: ID017
Recommended use: Cleaner.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name: IDEAL INDUSTRIES, INC.
Company Address: Becker Place,
Sycamore, IL 60178
Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181
Company Contact Name: Darryl Docter.
Company Contact Email: IDEAL@IDEALINDUSTRIES.COM
Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria.

Health hazards

Eye irritation, Category 2A.

Environmental hazards

Not classified as an environmental hazard under GHS criteria.

GHS Signal word: WARNING.

GHS Hazard statement(s): H319 Causes serious eye irritation.

GHS Hazard symbol(s):



GHS Precautionary statement(s):

Prevention:

- P264 - Wash hands thoroughly after handling.
- P280 - Wear eye protection/face protection.

Response:

- P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 - If eye irritation persists: Get medical advice/attention.

Storage:

No storage precautionary statements required.

Disposal:

No disposal precautionary statements required.

Hazard(s) not otherwise

Classified (HNO): None known.

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable

SECTION 3: Composition/information on ingredients

Mixture: Cleaner.

Chemical name	CAS#	Concentration (weight %)
Blend of Alcohol paneths	68131-39-5 68439-46-3	< 5%

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: Move to fresh air. Get medical attention if symptoms develop.

Skin contact: Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing seek medical attention. Clean contaminated clothing before reuse.

Eye contact: Thoroughly flush eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting upper and lower eye lids. If irritation persists, seek medical attention.

Ingestion: If victim is conscious and able to swallow, have the victim drink water to dilute. Never give anything by mouth if victim is unconscious or having convulsions. Induce vomiting only if advised by a physician or Poison Control Center. CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY.

Most important symptoms/effects, acute and delayed: Eye contact may be slightly irritating. May be harmful if ingested. Inhaling mist may cause irritation to respiratory tract. Prolonged contact may cause skin to become dry or minor irritation.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: After water evaporates residue can burn. Use water spray, carbon dioxide, alcohol type or universal type foam applied in accordance with the manufacturer's instructions.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: None known. Use water to keep fire-exposed containers cool.

Combustion products - May include and are not limited to oxides of carbon.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Ventilate area. Collect for disposal. Clean up remaining materials from spill with suitable absorbent. Clean area as appropriate since some material, even in small quantities; may present a slip hazard. Observe all personal protection equipment recommendations.

SECTION 7: Handling and Storage

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Handle and open container with care. Empty containers may contain product residue. Do not reuse empty containers without commercial cleaning and reconditioning. Wear personal protective equipment. Use good personal hygiene practices and wear appropriate personal protective equipment as required (see section 8).

Conditions for safe storage, including any incompatibles:

Keep Out of Reach of Children. Keep away from heat, sparks, flame, static electricity, or other sources of ignition. Where flammable mixtures may be present, equipment safe for such locations should be used. Store in a cool, dry place away from incompatible materials.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Blend of Alcohol paneths	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Blend of Alcohol paneths	No data available	No data available

USA. NIOSH Exposure Levels		
Substance	TWA	STEL
Blend of Alcohol paneths	No data available	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Individual protection measures, such as personal protective equipment:

Eye/face protection: None required but the use of safety glasses is recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

Skin and Hand protection: None required but use of chemical resistant (rubber, nitrile) gloves is recommended. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None required. Use supplied-air respiratory protection in enclosed spaces, if needed.

Other: Eye fountain in work area is recommended but not necessary.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Clear liquid.
Color:	Clear.
Odor:	Citrus.
Odor threshold:	No data available
pH:	5.0 – 8.0.
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	212 °F (100 °C)
Flash point:	>300°F
Evaporation rate:	No data available
Flammability (solid, gas):	The product is not flammable.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	1.00
Solubility(ies):	Dispersible in water
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Other information:

Percent volatile by volume (%): No data available
Percent solid by weight: <15%

SECTION 10: Stability and Reactivity

Reactivity: Not chemically reactive.
Chemical stability: Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions: Hazardous reactions not anticipated.
Conditions to avoid: Extreme temperatures.
Incompatible materials: Avoid strong oxidizing agents.
Hazardous decomposition Products: May include and are not limited to oxides of carbon.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: Skin contact is a primary route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:

May cause eye irritation. Inhaling mist may cause irritation to respiratory tract. May cause stomach distress or nausea.

Delayed and immediate effects and chronic effects from short or long-term exposure:

Prolonged contact may cause skin to become dry or minor irritation.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Blend of Alcohol paneths	LD ₅₀ Oral (Rat)	> 2000 mg/kg
	LD ₅₀ Dermal (Rabbit)	> 2000 mg/kg
	LC ₅₀ Inhalation (Rat)	No data available

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: Prolonged contact may cause skin to become dry or minor irritation.

Serious eye damage/eye irritation:	May cause irritation to the eyes.
Respiratory sensitization:	No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).
Skin sensitization:	No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).
Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for Aspiration hazard (or are below the concentration threshold for classification).
Further information:	No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Blend of Alcohol paneths	LC ₅₀	Fish	5 - 10 mg/l, 96 hours
	LC ₅₀	Aquatic Invertebrates (Daphnia)	5 - 10 mg/l, 48 hours
	EC ₅₀	Algae	10 - 100 mg/l, 72 hours

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

This product, in its present state, when discarded or disposed of, may be a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

This material is not classified as dangerous under DOT regulations.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations

Environmental hazards

Marine pollutant: No.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

None.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required or are exempt from the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65 as a carcinogen.

Massachusetts Right to Know: No components are listed on the Massachusetts Right to Know List.

New Jersey Right to Know: No components are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: No components are listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: Class D2B (Toxic material).

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: May 20, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Lafarge Masonry and Mortar Cement

Synonyms: Cement, Masonry Cement, Mortar Cement, Mortar Mix, Parging Mix, U.S. Cement® Custom Color Masonry Cement, Superbond, Types N, S, or M, MCN, or MCS Cement, Trinity® White, Dark and Ultra Dark Masonry Cement, and Premium Stucco Mix

Note: Cement is used as a binder in concrete and mortars that are widely used in construction.

Intended Use of the Product

This MSDS covers many types of Masonry and Mortar Cement. Individual composition of hazardous constituents will vary between types of cement.

Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.

8700 West Bryn Mawr Avenue, Suite 300

Chicago, IL 60631

Information: 773-372-1000 (9am to 5pm CST)

email: SDSinfo@Lafarge.com

Website: www.lafarge-na.com

Emergency Telephone Number

Emergency Number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Corr. 1C H314

Eye Dam. 1 H318

Skin Sens. 1 H317

Carc. 1A H350

STOT SE 3 H335

STOT RE 1 H372

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H314 - Causes severe skin burns and eye damage.
 H317 - May cause an allergic skin reaction.
 H318 - Causes serious eye damage.
 H335 - May cause respiratory irritation.
 H350 - May cause cancer (Inhalation).
 H372 - Causes damage to organs (lung/respiratory system, kidneys) through prolonged or repeated exposure (Inhalation).

Precautionary Statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood.
 P260 - Do not breathe dust.
 P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.
 P271 - Use only outdoors or in a well-ventilated area.
 P272 - Contaminated work clothing must not be allowed out of the workplace.
 P280 - Wear eye protection, protective clothing, protective gloves, respiratory protection.

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P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing.
Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Cement, portland, chemicals	(CAS No) 65997-15-1	30 – 60; 60 - 100	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Limestone	(CAS No) 1317-65-3	10 - 30; 60 - 50	Not classified
Calcium hydroxide	(CAS No) 1305-62-0	< 0.1; 0.1 - 1; 1 - 5; 5 - 10; 10 - 20	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402
Quartz	(CAS No) 14808-60-7	< 0.1; 0.1 - 1; 1 - 5; 5 - 10	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372
Gypsum (Ca(SO ₄).2H ₂ O)	(CAS No) 13397-24-5	5 - 10	Not classified
Magnesium oxide (MgO)	(CAS No) 1309-48-4	< 0.1; 0.1 - 1; 1 - 4	Not classified
Calcium oxide	(CAS No) 1305-78-8	< 0.1; 0.1 - 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals may be detected during chemical analysis.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 60 minutes. Take off immediately all contaminated clothing and wash it before reuse. Get immediate medical advice/attention.

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Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Prolonged or repeated exposure may cause damage to kidneys and respiratory system. May cause inflammation of the respiratory system and skin. Narcotic effect. May cause cancer (Inhalation). May cause an allergic skin reaction. Corrosive. Causes burns.

Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to mouth, nose, throat, and lungs, may cause difficulty in breathing.

Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Unhardened concrete is capable of causing dermatitis by irritation and allergy. Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers.

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder can cause severe eye irritation progressing to chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Prolonged or repeated exposure may cause damage to kidneys and respiratory system.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Product is not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Advice for Firefighters

Precautionary Measures Fire: Cement is caustic. Avoid breathing dust.

Firefighting Instructions: Do not get water inside containers. Do not apply water stream directly at source of leak.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Reacts with water, resulting in a slight release of heat, depending on the amount of lime (Calcium oxide) present. Avoid contact with incompatible materials.

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Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid generating and breathing dust.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Place spilled material into a container. Avoid actions that cause the cement to become airborne. Avoid inhalation of cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

Methods for Cleaning Up: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8. Contact competent authorities after a spill.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Proper grounding procedures to avoid static electricity should be followed. Bagged cement is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle with care and use appropriate control measures. Cutting, crushing or grinding hardened cement or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below. Do not handle until all safety precautions have been read and understood.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Keep bulk and bagged cement dry until used. Stack bagged material in a secure manner to prevent falling.

Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement. Cement can build up or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly.

Incompatible Materials: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Specific End Use(s) Cement is used as a binder in concrete and mortars that are widely used in construction.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government

Quartz (14808-60-7)

Mexico

OEL TWA (mg/m³)

0.1 mg/m³ (respirable fraction)

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USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
USA OSHA	OSHA PEL (STEL) (mg/m ³)	250 mppcf/%SiO ₂ +5, 10mg/m ³ /%SiO ₂ +2
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (respirable dust)
USA IDLH	US IDLH (mg/m ³)	50 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable particulate)
British Columbia	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable)
Manitoba	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Nunavut	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable mass)
Ontario	OEL TWA (mg/m ³)	0.10 mg/m ³ (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Québec	VEMP (mg/m ³)	0.1 mg/m ³ (respirable dust)
Saskatchewan	OEL TWA (mg/m ³)	0.05 mg/m ³ (respirable fraction)
Yukon	OEL TWA (mg/m ³)	300 particle/mL
Limestone (1317-65-3)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³ (total dust)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total dust)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Québec	VEMP (mg/m ³)	10 mg/m ³ (Limestone, containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf
Cement, portland, chemicals (65997-15-1)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
USA IDLH	US IDLH (mg/m ³)	5000 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total particulate matter containing no Asbestos and <1% Crystalline silica-total particulate)
Manitoba	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and

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		<1% Crystalline silica-respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Newfoundland & Labrador	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Nova Scotia	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Ontario	OEL TWA (mg/m ³)	1 mg/m ³ (containing no Asbestos and <1% Crystalline silica-respirable)
Prince Edward Island	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Québec	VEMP (mg/m ³)	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf
Calcium hydroxide (1305-62-0)		
Mexico	OEL TWA (mg/m ³)	5 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
Alberta	OEL TWA (mg/m ³)	5 mg/m ³
British Columbia	OEL TWA (mg/m ³)	5 mg/m ³
Manitoba	OEL TWA (mg/m ³)	5 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	5 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	5 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	5 mg/m ³
Nunavut	OEL STEL (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	10 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³
Ontario	OEL TWA (mg/m ³)	5 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	5 mg/m ³
Québec	VEMP (mg/m ³)	5 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	10 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	5 mg/m ³
Yukon	OEL STEL (mg/m ³)	10 mg/m ³
Yukon	OEL TWA (mg/m ³)	5 mg/m ³
Magnesium oxide (MgO) (1309-48-4)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (fume, total particulate)
USA IDLH	US IDLH (mg/m ³)	750 mg/m ³ (fume)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
British Columbia	OEL STEL (mg/m ³)	10 mg/m ³ (respirable dust and fume)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (fume, inhalable)
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)

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New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nunavut	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Northwest Territories	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable)
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Québec	VEMP (mg/m ³)	10 mg/m ³ (fume)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³ (inhalable fraction)
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Yukon	OEL STEL (mg/m ³)	10 mg/m ³ (fume)
Yukon	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Gypsum (Ca(SO₄).2H₂O) (13397-24-5)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³ (total dust)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total dust)
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable)
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Québec	VEMP (mg/m ³)	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf
Calcium oxide (1305-78-8)		
Mexico	OEL TWA (mg/m ³)	2 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	2 mg/m ³
USA IDLH	US IDLH (mg/m ³)	25 mg/m ³
Alberta	OEL TWA (mg/m ³)	2 mg/m ³
British Columbia	OEL TWA (mg/m ³)	2 mg/m ³
Manitoba	OEL TWA (mg/m ³)	2 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	2 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	2 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	2 mg/m ³
Nunavut	OEL STEL (mg/m ³)	4 mg/m ³
Nunavut	OEL TWA (mg/m ³)	2 mg/m ³

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Northwest Territories	OEL STEL (mg/m ³)	4 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	2 mg/m ³
Ontario	OEL TWA (mg/m ³)	2 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	2 mg/m ³
Québec	VEMP (mg/m ³)	2 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	4 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	2 mg/m ³
Yukon	OEL STEL (mg/m ³)	4 mg/m ³
Yukon	OEL TWA (mg/m ³)	2 mg/m ³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Gloves. In case of dust production: protective goggles. Insufficient ventilation: wear respiratory protection. Protective clothing.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Impermeable protective gloves.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust or wet cement to prevent contact with eyes. Wearing contact lenses when using cement, under dusty conditions, is not recommended.

Skin and Body Protection: Wear gloves, boot covers, and protective clothing impervious to water to prevent skin contact.

Respiratory Protection: Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Other Information: When using, do not eat, drink, or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Gray, buff, or white powder
Odor	: Odorless
Odor Threshold	: Not available
pH	: 12 - 13
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: > 1000 °C (> 1832 °F)
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: 2.65 - 3.15
Specific Gravity	: Not available
Solubility	: Slight; Water: 0.1 - 1 %
Partition Coefficient: N-Octanol/Water	: Not available

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Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Chemical Stability: Stable. Keep dry until use. Avoid contact with incompatible materials.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

Hazardous Decomposition Products: Reacts with water, resulting in a slight release of heat, depending on the amount of lime (Calcium oxide) present. Avoid contact with incompatible materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 12 - 13

Serious Eye Damage/Irritation: Causes serious eye damage.

pH: 12 - 13

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (lung/respiratory system, kidneys) through prolonged or repeated exposure (Inhalation).

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Irritating to mouth, nose, throat, and lungs, may cause difficulty in breathing.

Symptoms/Injuries After Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis.

Unhardened concrete is capable of causing dermatitis by irritation and allergy. Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers.

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Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder can cause severe eye irritation progressing to chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Causes damage to organs.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg
Calcium hydroxide (1305-62-0)	
LD50 Oral Rat	7340 mg/kg
Calcium oxide (1305-78-8)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2500 mg/kg
Quartz (14808-60-7)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity No additional information available

Calcium hydroxide (1305-62-0)	
LC50 Fish 1	50.6 mg/l
Calcium oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

Persistence and Degradability Not available

Bioaccumulative Potential

Calcium hydroxide (1305-62-0)	
BCF Fish 1	(no bioaccumulation)
Calcium oxide (1305-78-8)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

Additional Information: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT Not regulated for transport

In Accordance with IMDG Not regulated for transport

In Accordance with IATA Not regulated for transport

In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Lafarge Masonry and Mortar Cement	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard

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	Immediate (acute) health hazard
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cement, portland, chemicals (65997-15-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium hydroxide (1305-62-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Magnesium oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium oxide (1305-78-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Quartz (14808-60-7)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Limestone (1317-65-3)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Cement, portland, chemicals (65997-15-1)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium hydroxide (1305-62-0)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Magnesium oxide (MgO) (1309-48-4)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Gypsum (Ca(SO4).2H2O) (13397-24-5)	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium oxide (1305-78-8)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Canadian Regulations

Lafarge Masonry and Mortar Cement	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects

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Quartz (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Limestone (1317-65-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Cement, portland, chemicals (65997-15-1)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

WHMIS Classification Class E - Corrosive Material
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Calcium hydroxide (1305-62-0)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Class E - Corrosive Material
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Magnesium oxide (MgO) (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Calcium oxide (1305-78-8)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Class E - Corrosive Material
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 04/15/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3

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H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

Party Responsible for the Preparation of This Document

Lafarge North America Inc.
+1 773-372-1000 (9am to 5pm CST)

An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE.

North America GHS US 2012 & WHMIS 2

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Lafarge Portland Cement (cement)

Synonyms: Cement, Portland Cement, Hydraulic Cement, Oil Well Cement, Trinity® White Cement, Antique White Cement, Portland Limestone Cement, Portland Cement Type I, IA, IE, II, I/II, IIA, II L.A., III, IIIA, IV, IVA, V, VA, 10, 20, 30, 40, 50, GU, GUL, MS, MH, HE, LH, HS, OWH, OWG Cement, OW Class G HSR, InfiniCem™

Note: This SDS covers many types of Portland cement. Individual composition of hazardous constituents will vary between types of Portland cement.

Intended Use of the Product

Cement is used as a binder in concrete and mortars that are widely used in construction. Cement is distributed in bags, totes and bulk shipment.

Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.

8700 West Bryn Mawr Avenue, Suite 300

Chicago, IL 60631

Information: 773-372-1000 (9am to 5pm CST)

email: SDSinfo@Lafarge.com

Website: www.lafarge-na.com

Emergency Telephone Number

Emergency number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Corr. 1C H314

Eye Dam. 1 H318

Skin Sens. 1 H317

Carc. 1A H350

STOT SE 3 H335

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H314 - Causes severe skin burns and eye damage
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H335 - May cause respiratory irritation
 H350 - May cause cancer (Inhalation)

Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P260 - Do not breathe dust.
 P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
 P271 - Use only outdoors or in a well-ventilated area.
 P272 - Contaminated work clothing should not be allowed out of the workplace.
 P280 - Wear protective gloves, protective clothing, face protection, eye protection.
 P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303+P361+P353+P352 - IF ON SKIN (or hair): Remove/Take off immediately all

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contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P321 - Specific treatment (see Section 4).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container according to local, regional, state, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Inhalation can cause serious, potentially irreversible lung/respiratory tract tissue damage due to chemical (caustic) burns, including third degree burns. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) or sensitivity to hexavalent chromium can be aggravated by exposure.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product identifier	% (w/w)	Classification (GHS-US)
Cement, portland, chemicals	(CAS No) 65997-15-1	100	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Limestone	(CAS No) 1317-65-3	0 - 15	Not classified
Gypsum (Ca(SO ₄).2H ₂ O)	(CAS No) 13397-24-5	2 - 10	Not classified
Calcium oxide	(CAS No) 1305-78-8	0 - 5	Skin Corr. 1C, H314 Eye Dam. 1, H318 STOT SE 3, H335
Magnesium oxide (MgO)	(CAS No) 1309-48-4	0 - 4	Not classified
Quartz	(CAS No) 14808-60-7	0 - 0.2	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. If you feel unwell, seek medical advice.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Immediately call a POISON CENTER or doctor/physician.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 60 minutes. Immediately call a POISON CENTER or doctor/physician.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Corrosive to eyes, respiratory system and skin. Exposure may produce an allergic reaction.

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Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to the respiratory tract.

Skin Contact: Cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Cement is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Irritant dermatitis is caused by the physical properties of cement including alkalinity and abrasion. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others may develop allergic dermatitis after years of repeated contact with cement.

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not get water inside containers. Do not apply water stream directly at source of leak.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: None.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not breathe dust. Do not get in eyes, on skin, or on clothing.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

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For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Place spilled material into a container. Avoid actions that cause the cement to become airborne. Avoid inhalation of cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

Methods for Cleaning Up: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Keep bulk and bagged cement dry until used. Stack bagged material in a secure manner to prevent falling. Bagged cement is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle with care and use appropriate control measures. Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement. Cement can buildup or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly. Properly ground all pneumatic conveyance systems. The potential exists for static build-up and static discharge when moving cement powders through a plastic, non-conductive, or non-grounded pneumatic conveyance system. The static discharge may result in damage to equipment and injury to workers. Cutting, crushing or grinding hardened cement, concrete or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible Materials: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Storage Temperature: Unlimited

Specific End Use(s) Cement is used as a binder in concrete and mortars that are widely used in construction. Cement is distributed in bags, totes and bulk shipment.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Limestone (1317-65-3)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Québec	VEMP (mg/m ³)	10 mg/m ³ (Limestone, containing no Asbestos and <1% Crystalline silica)

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Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³
Cement, portland, chemicals (65997-15-1)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
USA IDLH	US IDLH (mg/m ³)	5000 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Manitoba	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nova Scotia	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	1 mg/m ³ (containing no Asbestos and <1% Crystalline silica)
Prince Edward Island	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Québec	VEMP (mg/m ³)	5 mg/m ³ (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³
Gypsum (Ca(SO4).2H2O) (13397-24-5)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³
Québec	VEMP (mg/m ³)	5 mg/m ³ (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³

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Calcium oxide (1305-78-8)		
Mexico	OEL TWA (mg/m ³)	2 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	2 mg/m ³
USA IDLH	US IDLH (mg/m ³)	25 mg/m ³
Alberta	OEL TWA (mg/m ³)	2 mg/m ³
British Columbia	OEL TWA (mg/m ³)	2 mg/m ³
Manitoba	OEL TWA (mg/m ³)	2 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	2 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	2 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	2 mg/m ³
Nunavut	OEL STEL (mg/m ³)	4 mg/m ³
Nunavut	OEL TWA (mg/m ³)	2 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	4 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	2 mg/m ³
Ontario	OEL TWA (mg/m ³)	2 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	2 mg/m ³
Québec	VEMP (mg/m ³)	2 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	4 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	2 mg/m ³
Yukon	OEL STEL (mg/m ³)	4 mg/m ³
Yukon	OEL TWA (mg/m ³)	2 mg/m ³
Magnesium oxide (MgO) (1309-48-4)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³
USA IDLH	US IDLH (mg/m ³)	750 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	10 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³
Nunavut	OEL STEL (mg/m ³)	20 mg/m ³
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	20 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³
Ontario	OEL TWA (mg/m ³)	10 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³
Québec	VEMP (mg/m ³)	10 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	10 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³
Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m ³)	0.1 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³
USA OSHA	OSHA PEL (STEL) (mg/m ³)	250 mppcf/%SiO ₂ +5, 10mg/m ³ /%SiO ₂ +2
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³

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USA IDLH	US IDLH (mg/m ³)	50 mg/m ³
Alberta	OEL TWA (mg/m ³)	0.025 mg/m ³
British Columbia	OEL TWA (mg/m ³)	0.025 mg/m ³
Manitoba	OEL TWA (mg/m ³)	0.025 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	0.1 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.025 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	0.025 mg/m ³
Nunavut	OEL TWA (mg/m ³)	0.3 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	0.3 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	0.10 mg/m ³ (designated substances regulation)
Prince Edward Island	OEL TWA (mg/m ³)	0.025 mg/m ³
Québec	VEMP (mg/m ³)	0.1 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	0.05 mg/m ³
Yukon	OEL TWA (mg/m ³)	300 particle/mL

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Gloves. In case of dust production: protective goggles. Dust formation: dust mask.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear gloves impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust to prevent contact with eyes. Wearing contact lenses when using Limestone and Dolomite, under dusty conditions, is not recommended.

Skin and Body Protection: Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.

Respiratory Protection: Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Other Information: When using, do not eat, drink or smoke

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Gray, off white or white powder
Odor	: Odorless
Odor Threshold	: Not available
pH	: 12 - 13 (in water)
Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: > 1000 °C (> 1832 °F)
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available

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Relative Vapor Density at 20 °C	: Not available
Relative Density/Specific Gravity	: 3.15
Solubility	: Water: 0.1 - 1 % (slightly soluble)
Partition coefficient: n-octanol/water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Acids. Ammonium salts. Aluminum. Hydrofluoric acid. Water. Oxidizers.

Hazardous Decomposition Products: None known.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage. (pH: 12 - 13 (in water))

Serious Eye Damage/Irritation: Causes serious eye damage. (pH: 12 - 13 (in water))

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to the respiratory tract.

Symptoms/Injuries After Skin Contact: Cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Cement is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Irritant dermatitis is caused by the physical properties of cement including alkalinity and abrasion. Allergic contact dermatitis is caused by sensitization to hexavalent chromium

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(chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others may develop allergic dermatitis after years of repeated contact with cement.

Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Calcium oxide (1305-78-8)	
ATE CLP (oral)	500.000 mg/kg
Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
Quartz (14808-60-7)	
IARC Group	1
National Toxicity Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Calcium oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

Persistence and Degradability Not available

Bioaccumulative Potential

Calcium oxide (1305-78-8)	
BCF fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

Additional Information: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT Not regulated for transport

14.2 In Accordance with IMDG Not regulated for transport

14.3 In Accordance with IATA Not regulated for transport

14.4 In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION


US Federal Regulations

Lafarge Portland Cement (cement)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cement, portland, chemicals (65997-15-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium oxide (1305-78-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

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Magnesium oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
US State Regulations	
Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Limestone (1317-65-3)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Cement, portland, chemicals (65997-15-1)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Gypsum (Ca(SO4).2H2O) (13397-24-5)	
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium oxide (1305-78-8)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Magnesium oxide (MgO) (1309-48-4)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Quartz (14808-60-7)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Canadian Regulations	
Lafarge Portland Cement (cement)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material
	
Limestone (1317-65-3)	
Listed on Non-Domestic Substances List (NDSL)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Cement, portland, chemicals (65997-15-1)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class E - Corrosive Material
Calcium oxide (1305-78-8)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class E - Corrosive Material

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Magnesium oxide (MgO) (1309-48-4)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Quartz (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 04/23/2015
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure

Party Responsible for the Preparation of This Document

Lafarge North America Inc.
+1 773-372-1000 (9am to 5pm CST)

An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE.

North America GHS US 2012 & WHMIS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name / Product code : Amerimix Mortar Type M, S & N Portland Cement Lime Sand (AMX 400)
 Amerimix Mortar Type S Fast Set Portland Cement Cement Lime Sand (AMX 400-S FS)
 Amerimix Water Repellent Mortar Type N & S Portland Cement Lime Sand (AMX 410)
 Amerimix Pointing Mortar (AMX 420)
 Amerimix Stone Veneer Mortar - Buff (AMX 470)
 Amerimix Polymer Modified Stone Veneer Mortar (AMX 475)
 Amerimix Mortar Type M, S & N Masonry Cement & Sand (AMX 500)
 Amerimix Water Repellent Mortar Type M, N & S Masonry Cement & Sand (AMX 510)
 Amerimix Coarse Grout - Core Fill (AMX 600 CG)
 Amerimix Fine Grout - Core Fill (AMX 600 FG)
 Amerimix Self Consolidating Coarse Grout (AMX 610 CG)
 Amerimix Scratch Brown & Finish Stucco (AMX 700 SBF)
 Amerimix Water Mold Mildew Resistant Stucco (AMX 710 WMMR)
 Amerimix Premium Plus Stucco (AMX 715 Prem+ Stuc With & Without Fiber)
 Amerimix 2:1 Scratch Brown & Finish Stucco (AMX 760 2:1 SBF)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Various.

1.3. Details of the supplier of the safety data sheet

Oldcastle Architectural Inc.
 900 Ashwood Parkway Suite 600
 30338 Atlanta, GA - USA
 T 800-334-0784 Tech Service: Monday - Friday; 8:00am - 5:00pm EST

1.4. Emergency telephone number

Emergency number : CHEMTREC (800) 424-9300
 CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity 4 (Oral)
 Skin Irritation 2
 Serious Eye Damage 1
 Skin Sensitization 1
 Carcinogenicity 1A
 Specific Target Organ Toxicity After Single Exposure 3
 Specific Target Organ Toxicity After Repeated Exposure 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to lungs through prolonged or repeated exposure.

Precautionary statements (GHS-US) : Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust. If exposed or concerned: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center/doctor if you feel unwell. Store locked up. Store in a well ventilated place. Keep container tightly closed. Dispose of contents and container in accordance with all local, regional, national and international regulations.

AMX Series 400, 500, 600, 700

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

2.3. Other hazards

Other hazards not contributing to the classification : Not applicable.

2.4. Unknown acute toxicity (GHS-US)

Amerimix 2:1 Scratch Brown & Finish Stucco (AMX 760 2:1 SBF): 20% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Polymer Modified Stone Veneer Mortar (AMX 475): 19% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Stone Veneer Mortar - Buff (AMX 470): 18% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Scratch Brown & Finish Stucco (AMX 700 SBF): 17% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Water Mold Mildew Resistant Stucco (AMX 710 WMMR); Amerimix Premium Plus Stucco (AMX 715 Prem+Stuc W & WO Fiber); Amerimix Fine Grout - Core Fill (AMX 600 FG); Amerimix Water Repellent Mortar Type M, N & S Masonry Cement & Sand (AMX 510); Amerimix Mortar Type M, S & N Masonry Cement & Sand (AMX 500): 16% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Water Repellent Mortar Type N & S Portland Cement Lime Sand (AMX 410): 14% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Mortar Type M, S & N Portland Cement Lime Sand (AMX 400): 13% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Coarse Grout - Core Fill (AMX 600 CG); Amerimix Self Consolidating Coarse Grout (AMX 610 CG); Amerimix Mortar Type S Fast Set Portland Cement Cement Lime Sand (AMX 400-S FS): 12% of the mixture consists of ingredient(s) of unknown acute toxicity.
Amerimix Pointing Mortar (AMX 420): 10% of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Quartz	(CAS No) 14808-60-7	60 - 100	Acute Tox. 4 (Oral), H302 Carc. 1A, H350 STOT RE 1, H372
Cement, portland, chemicals	(CAS No) 65997-15-1	10 - 35	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Calcium magnesium hydroxide (CaMg(OH)4)	(CAS No) 39445-23-3	2.5 - 7	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Calcium magnesium hydroxide oxide (CaMg(OH)2O)	(CAS No) 58398-71-3	2.5 - 7	Not classified
Calcium hydroxide	(CAS No) 1305-62-0	1 - 5	Skin Corr. 1B, H314 Eye Dam. 1, H318
Limestone	(CAS No) 1317-65-3	0.5 - 2	Not classified
Calcium oxide	(CAS No) 1305-78-8	0.5 - 2	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Calcium sulfate	(CAS No) 7778-18-9	0.5 - 2	Not classified
Gypsum (Ca(SO4).2H2O)	(CAS No) 13397-24-5	0.5 - 2	Not classified

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (j) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory tract irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitisation by skin contact.
- Symptoms/injuries after eye contact : Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
- Symptoms/injuries after ingestion : Harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

AMX Series 400, 500, 600, 700

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.
Unsuitable extinguishing media : Not available.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

Firefighting instructions : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Methods for cleaning up : Vacuum or sweep material and place in a disposal container.

6.3. Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid generating and breathing dust. Do not swallow. Good housekeeping is important to prevent accumulation of dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle and open container with care. When using do not eat, drink or smoke.
Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store in dust-tight, dry, labelled containers. Keep container tightly closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Do not store in an area equipped with emergency water sprinklers.

7.3. Specific end use(s)

No additional information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	(30)/(%SiO ₂ + 2) mg/m ³ TWA, total dust (250)/(%SiO ₂ + 5) mppcf TWA, respirable fraction (10)/(%SiO ₂ + 2) mg/m ³ TWA, respirable fraction
Cement, portland, chemicals (65997-15-1)		
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Calcium oxide (1305-78-8)		
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Calcium hydroxide (1305-62-0)		
USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Calcium sulfate (7778-18-9)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³

AMX Series 400, 500, 600, 700

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Limestone (1317-65-3)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Gypsum (Ca(SO ₄).2H ₂ O) (13397-24-5)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Hand protection	: Wear suitable waterproof gloves.
Eye protection	: Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).
Skin and body protection	: Wear suitable waterproof protective clothing.
Respiratory protection	: A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).
Other information	: Handle according to established industrial hygiene and safety practices. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid.
Appearance	: Powder.
Colour	: Various.
Odour	: Characteristic.
Odour threshold	: No data available.
pH	: 12 - 13
Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: No data available.
Self ignition temperature	: No data available.
Decomposition temperature	: No data available.
Flammability (solid, gas)	: Not Flammable.
Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Solubility	: No data available.
Log Pow	: No data available.
Log Kow	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available.

9.2. Other information

VOC content	: 0%, Not applicable; 0 wt, Not applicable.
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SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Keep dry in storage.

AMX Series 400, 500, 600, 700

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials. Moisture.

10.5. Incompatible materials

Wet cement is alkaline and incompatible with acid, ammonium salts and aluminum metal.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Quartz (14808-60-7)	
LD50 oral rat	500 mg/kg
Calcium oxide (1305-78-8)	
LD50 oral rat	500 mg/kg
Calcium hydroxide (1305-62-0)	
LD50 oral rat	7340 mg/kg
Calcium sulfate (7778-18-9)	
LD50 oral rat	> 3000 mg/kg

AMX Series 400, 500, 600, 700	
ATE (oral)	530.2 mg/kg - 653.8 mg/kg, rat
ATE (dermal)	No data available.
ATE (inhalation)	No data available.

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : May cause cancer.

Quartz (14808-60-7)	
IARC group	1
National Toxicity Program (NTP) Status	2

Reproductive toxicity : Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure) : May cause respiratory irritation.
Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure. (Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.)
Aspiration hazard : Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation : May cause respiratory tract irritation.
Symptoms/injuries after skin contact : Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitisation by skin contact.
Symptoms/injuries after eye contact : Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/injuries after ingestion : Harmful if swallowed. May cause stomach distress, nausea or vomiting.
Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological consideration when used according to directions. Normal dilution of this product to drains, sewers, septic systems and treatment plants is not considered environmentally harmful.

AMX Series 400, 500, 600, 700

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

12.2. Persistence and degradability

AMX Series 400, 500, 600, 700

Persistence and degradability	No data available.
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12.3. Bioaccumulative potential

AMX Series 400, 500, 600, 700

Bioaccumulative potential	No data available.
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12.4. Mobility in soil

AMX Series 400, 500, 600, 700

Ecology - soil	No data available.
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12.5. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

In accordance with DOT:

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Additional information

Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Quartz (14808-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cement, portland, chemicals (65997-15-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium oxide (1305-78-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium magnesium hydroxide (CaMg(OH)₄) (39445-23-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium magnesium hydroxide oxide (CaMg(OH)₂O) (58398-71-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium hydroxide (1305-62-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium sulfate (7778-18-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Limestone (1317-65-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

AMX Series 400, 500, 600, 700

State or local regulations	This product contains Crystalline Silica, Quartz and may also contain other chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
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AMX Series 400, 500, 600, 700

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 16: Other information

Data sources	:	SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.
NFPA health hazard	:	3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

IRWIN Chalk – Red, Permanent	October 23, 2013
	Revision 1

1. PRODUCT and COMPANY IDENTIFICATION

Commercial Product Name: **IRWIN Chalk – Red, Permanent**
Company: IRWIN Tools
Use of product: Snap line mark
Emergency contact: 1-800-464-7946 8:00am-5:00pm Monday-Friday

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Non-combustible red solid powder with no odor. Irritating to eyes, skin, and respiratory system. Exposure to large quantities of this material may cause acute irritation of eyes and difficulty breathing.

OSHA GHS Hazard Statements (Warning Label)

DANGER – May cause cancer (lung) (Category 1A)

Hazard Ratings:

Hazardous Material Identification System (HMIS):

Health 1*, Flammability 0, Reactivity 0 *chronic effects

National Fire Protection Association (NFPA):

Health 1, Flammability 0, Reactivity 0

Eye: May cause irritation. Chalk dust is discomforting and abrasive to the eyes.

Skin: Prolonged skin contact may cause irritation. When the product is used as intended, it is unlikely to cause discomfort.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.

Inhalation: May cause respiratory tract irritation. When the product is used as intended, it is unlikely to cause discomfort.

Chronic: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). Prolonged inhalation of iron oxide dust is known to produce a benign lung condition known as siderosis. When the product is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.



Obtain special instructions before use. May cause cancer by inhalation. Avoid breathing dust or fume. Causes serious eye irritation. Causes mild skin irritation. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Value (%)	CAS No.	EC No.
Calcium carbonate ¹	75 - 80	471-34-1	207-439-9
Red Iron Oxide	20 - 25	1309-37-1	215-168-2
Silica (crystalline quartz) ¹	0.1 - 1	14808-60-7	238-878-4

¹ Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

SAFETY DATA SHEET

IRWIN Chalk – Red, Permanent

4. FIRST AID MEASURES

Inhalation: Remove from exposure and move to fresh air immediately. Encourage the patient to blow nose to ensure clear breathing passages. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Skin contact: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Launder contaminated clothing before wearing again. Wash affected area with water (and soap if available) Get medical aid in the event of irritation.

Eye contact: Do not rub eyes, rubbing may cause abrasions. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: If the victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Additional advice: Show this safety data sheet to the doctor in attendance

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Substance is noncombustible, however; the containers may burn, releasing carbon monoxide, and carbon dioxide. Use appropriate extinguishing media for the combustible material involved in a fire.

Explosion: No information found.

Specific hazards: If oxidation of this product should occur, heat will be liberated which could cause surrounding combustibles to burn.

Special protective equipment for Firefighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear appropriate personal protective equipment as specified in Section 8.

Environmental precautions: Do not allow this material to be released to the environment without proper governmental permits.

Methods for cleaning up: Recover the product whenever possible. Avoid generating dust when sweeping/shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal. Follow applicable OSHA regulations (29 CFR 1910.120)

7. HANDLING AND STORAGE

Storage: Store this product in a tightly-closed container in a dry, well-ventilated area away from incompatible substances.

Handling: Avoid creating, or breathing dust. Practice good personal hygiene, (hand washing, etc.) after using this product. Avoid contact with skin and eyes.

Packaging material: No information found.

SAFETY DATA SHEET

IRWIN Chalk – Red, Permanent

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	% by weight	Exposure Limit 8-Hour TWA ¹ (mg/m ³)		
			OSHA PEL	ACGIH TLV	NIOSH REL
Calcium Carbonate ⁴ (Limestone)	471-34-1; (1317-65-3)	70-75	15 ² 5 ³	10 ²	10 ² 5 ³
Red Iron Oxide	1309-37-1	25-30	10	5 ³	5
Silica-Crystalline Quartz ⁴	14808-60-7	0.1-1.0	10 ^{2,5} , 3.3 ^{3,5}	0.05 ³	0.05 ³

¹ TWA = Time-weighted average

² Total dust.

³ Respirable dust.

⁴ Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

⁵ Using the OSHA quartz formula, this PEL was calculated assuming crystalline silica content of 1.0% in this ingredient.

Exposure and Engineering Controls: Facilities storing or utilizing this material should have potable water available for washing eyes and skin. Use sufficient general area (or outdoor) ventilation. Local exhaust ventilation should be used if airborne concentrations of dust exceed limits cited in Section 8.

Personal protective equipment:

Hand protection: Wear protective gloves

Eye protection: Wear safety glasses, or chemical goggles in windy conditions or where eye contact is possible.

Respiratory protection: When engineering controls are not sufficient to reduce exposure, seek professional advice prior to respirator selection and use. Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Hygiene measures: Wash contaminated clothing before reuse.

Environmental exposure controls: No information found.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder
Color:	Red
Odor:	Odorless.
pH (at 10% solids):	8.5-9.5.
Boiling point/range:	No data available.
Melting point/range:	Decomposes at 1,517 °F (825°C).
Flash point:	No data available.
Evaporation rate:	No data available.
Vapor density:	No data available.
Solubility in water:	<0.0002 (Trace)
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Vapor pressure:	No data available.
Relative density (H ₂ O=1):	3.40-3.45.
Viscosity:	No data available.
Partition coefficient (n-octanol/water):	No data available.

SAFETY DATA SHEET

IRWIN Chalk – Red, Permanent

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, calcium oxide.

Materials to avoid: Strong oxidizing agents, acids, aluminum, fluorine, magnesium, peroxides hydrazine, calcium hypochlorite, performic acid, and bromine pentafluoride.

Conditions to avoid: Incompatible materials.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Note: Toxicological effects described in this section are those that would be expected based on data from the components of this product.

Acute toxicity: Calcium carbonate (CAS# 471-34-1): Draize test, rabbit, eye: 750 ug/24H Severe; Draize test, rabbit, skin: 500 mg/24H Moderate; Oral, rat: LD50 = 6,450mg/kg.

Inhalation: (Silica, crystalline quartz) Human: LC_{Lo}: 300 µg/m³/ intermittent exposure over a 10-year period produced pulmonary system effects.

Skin contact: (Calcium carbonate) Rabbit: 500mg administered for 24 hours produces moderate skin irritation.

Eye contact: (Calcium carbonate) Rabbit: 0.750 mg administered for 24 hours produced severe irritation.

Ingestion: (Calcium carbonate) Rat: LD₅₀: 6,450 mg/kg.
(Iron Oxide) Rat: LD₅₀: >5,000 mg/kg.

Chronic toxicity/Carcinogenicity: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits.

Quartz – crystalline silica:

The International Agency for Research on Cancer (IARC) has designated this substance Group 1, “carcinogenic to humans”.

The National Toxicology Program (NTP) has designated this substance: Group K “known to be a human carcinogen”

American Conference of Governmental Industrial Hygienists (ACGIH) has designated this substance A2; suspected human carcinogen. The agent is carcinogenic in experimental animals at dose levels, by route of administration, at sites of histologic type(s) or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

12. ECOLOGICAL INFORMATION

Bioaccumulation: No information found.

Ecotoxicity effects: No information found.

Fish Toxicity: Golden Orfe (*Leuciscus idus*) LC_{Lo}: greater than 1,000 mg/l. Limestone (which is primarily composed of calcium carbonate) is not classified as a “Toxic pollutant” or a “hazardous substance under Section 307 and 311 of the United States Clean Water Act.

13. DISPOSAL CONSIDERATIONS

Waste from residues of this product is not a hazardous waste according to U.S. Environmental Protection Agency (EPA) regulations. Disposal by landfill may be acceptable.

Consult an expert on the disposal of recovered material for compliance with state, provincial, and/or local regulations.

SAFETY DATA SHEET

IRWIN Chalk – Red, Permanent

14. TRANSPORT INFORMATION

U.S. DOT: Not regulated

ADR/RID: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA: Ingredients are listed as air contaminants (29 CFR 1910.1000).

Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

TSCA (Toxic Substance Control Act): All components of this product are listed on the TSCA inventory.

CERCLA: Hazardous Substance, (40 CFR 302.4): Not Listed.
Extremely Hazardous Substance (40 CFR 355): Not Listed.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category:

"An immediate (acute) and chronic health hazard."

Chemicals subject to the reporting requirements of Section 313 or Title III of SARA and 40 CFR Part 372: None.

STATE REGULATIONS:

California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65)

This product contains the following Proposition 65 regulated materials known to the State of California to cause cancer or reproductive harm. The listed typical amounts are a result of their natural presence in the raw materials from which this product is produced.

Silica-crystalline quartz	equal to, or less than 1.0 percent
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CANADA WHIMS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the SDS contains all of the information required by the CPR.

WHIMS Classification: D2A

16. OTHER INFORMATION

The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC

SAFETY DATA SHEET

IRWIN Chalk – Red, Permanent

Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document

IRWIN Chalk – Blue, Standard

October 23, 2013

Revision 1

1. PRODUCT and COMPANY IDENTIFICATION

Commercial Product Name: **IRWIN Chalk – Blue**

Company: IRWIN Tools

Use of product: Snap line, mark

Emergency contact: 1-800-464-7946 8:00am-5:00pm Monday-Friday

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Non-combustible blue solid powder with no odor. Irritating to eyes, skin, and respiratory system. Exposure to large quantities of this material may cause acute irritation of eyes and difficulty breathing.

OSHA GHS Hazard Statements (Warning Label)

DANGER – May cause cancer (lung) (Category 1A)

Hazard Ratings:

Hazardous Material Identification System (HMIS):

Health 2*, Flammability 0, Reactivity 0 *chronic effects

National Fire Protection Association (NFPA):

Health 2, Flammability 0, Reactivity 0

Eye: May cause irritation. Chalk dust is discomforting and abrasive to the eyes.

Skin: Prolonged skin contact may cause irritation. May cause an allergic reaction in certain individuals. When the product is used as intended, it is unlikely to cause discomfort.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.

Inhalation: May cause respiratory tract irritation. When the product is used as intended, it is unlikely to cause discomfort.

Chronic: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.



Obtain special instructions before use. May cause cancer by inhalation. Avoid breathing dust or fume. Causes serious eye irritation. Causes mild skin irritation. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Value (%)	CAS No.	EC No.
Calcium carbonate ¹	80-85	471-34-1	207-439-9
Ultramarine blue	15-20	57455-37-5	none
Silica (crystalline quartz) ¹	0.1 - 1	14808-60-7	238-878-4

¹ Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

SAFETY DATA SHEET

IRWIN Chalk – Blue

4. FIRST AID MEASURES

Inhalation: Remove from exposure and move to fresh air immediately. Encourage the patient to blow nose to ensure clear breathing passages. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Skin contact: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Launder contaminated clothing before wearing again. Wash affected area with water (and soap if available) Get medical aid in the event of irritation.

Eye contact: Do not rub eyes, rubbing may cause abrasions. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Wash mouth out with plenty of water. Do not induce vomiting unless directed to do so by medical personnel. Get immediate medical aid.

Additional advice: Show this safety data sheet to the doctor in attendance

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Substance is noncombustible.

Explosion: No information found.

Specific hazards: Not considered to be a significant fire risk, however; the containers may burn, releasing carbon monoxide, and carbon dioxide.

Special protective equipment for Firefighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear appropriate personal protective equipment as specified in Section 8.

Environmental precautions: Do not allow this material to be released to the environment without proper governmental permits.

Methods for cleaning up: Recover the product whenever possible. Avoid generating dust when sweeping/shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal. Follow applicable OSHA regulations (29 CFR 1910.120)

7. HANDLING AND STORAGE

Storage: Store this product in a tightly-closed container in a dry, well-ventilated area away from incompatible substances.

Handling: Avoid creating, or breathing dust. Practice good personal hygiene, (hand washing, etc.) after using this product. Avoid contact with skin and eyes.

Packaging material: No information found.

SAFETY DATA SHEET

IRWIN Chalk – Blue

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	% by weight	Exposure Limit 8-Hour TWA ¹ (mg/m ³)		
			OSHA PEL	ACGIH TLV	NIOSH REL
Calcium Carbonate ⁴ (Limestone)	471-34-1; (1317-65-3)	80-85	15 ² 5 ³	10 ²	10 ² 5 ³
Ultramarine blue	57455-37-5	15-20	Not Est.	Not Est.	Not Est.
Silica-Crystalline Quartz ⁴	14808-60-7	0.1-1.0	10 ^{2,5} , 3.3 ^{3,5}	0.05 ³	0.05 ³

¹ TWA = Time-weighted average

² Total dust.

³ Respirable dust.

⁴ Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

⁵ Using the OSHA quartz formula, this PEL was calculated assuming crystalline silica content of 1.0% in this ingredient.

Exposure and Engineering Controls: Facilities storing or utilizing this material should have potable water available for washing eyes and skin. Use sufficient general area (or outdoor) ventilation. Local exhaust ventilation should be used if airborne concentrations of dust exceed limits cited in Section 8.

Personal protective equipment:

Hand protection: Wear protective gloves

Eye protection: Wear safety glasses, or chemical goggles in windy conditions or where eye contact is possible.

Respiratory protection: When engineering controls are not sufficient to reduce exposure, seek professional advice prior to respirator selection and use. Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Hygiene measures: Wash contaminated clothing before reuse.

Environmental exposure controls: No information found.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder
Color:	Blue
Odor:	Odorless.
pH (at 10% solids):	8.5-9.5.
Boiling point/range:	No data available.
Melting point/range:	Decomposes
Flash point:	No data available.
Evaporation rate:	No data available.
Vapor density:	No data available.
Solubility in water:	<0.0002 (Trace)
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Vapor pressure:	No data available.
Relative density (H ₂ O=1):	2.60-2.65.
Viscosity:	No data available.
Partition coefficient (n-octanol/water):	No data available.

SAFETY DATA SHEET

IRWIN Chalk – Blue

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, calcium oxide.

Materials to avoid: Strong oxidizing agents, acids, aluminum, fluorine, magnesium

Conditions to avoid: Incompatible materials, moisture.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Note: Toxicological effects described in this section are those that would be expected based on data from the components of this product.

Acute toxicity: Calcium carbonate (CAS# 471-34-1): Draize test, rabbit, eye: 750 ug/24H Severe; Draize test, rabbit, skin: 500 mg/24H Moderate; Oral, rat: LD50 = 6,450mg/kg.

Inhalation: (Silica, crystalline quartz) Human: LC_{Lo}: 300 µg/m³/ intermittent exposure over a 10-year period produced pulmonary system effects.

Skin contact: (Calcium carbonate) Rabbit: 500mg administered for 24 hours produces moderate skin irritation.

Eye contact: (Calcium carbonate) Rabbit: 0.750 mg administered for 24 hours produced severe irritation.

Ingestion: (Calcium carbonate) Rat: LD₅₀: 6,450 mg/kg.
(Ultramarine blue) Rat: LD₅₀: 5,000 mg/kg.

Chronic toxicity/Carcinogenicity: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits.

Quartz – crystalline silica:

The International Agency for Research on Cancer (IARC) has designated this substance Group 1, “carcinogenic to humans”.

The National Toxicology Program (NTP) has designated this substance: Group K “known to be a human carcinogen”

American Conference of Governmental Industrial Hygienists (ACGIH) has designated this substance A2; suspected human carcinogen. The agent is carcinogenic in experimental animals at dose levels, by route of administration, at sites of histologic type(s) or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

12. ECOLOGICAL INFORMATION

Bioaccumulation: No information found.

Ecotoxicity effects: No information found.

Limestone (which is primarily composed of calcium carbonate) is not classified as a “Toxic pollutant” or a “hazardous substance under Section 307 and 311 of the United States Clean Water Act.

13. DISPOSAL CONSIDERATIONS

Waste from residues of this product is not a hazardous waste according to U.S. Environmental Protection Agency (EPA) regulations. Disposal by landfill may be acceptable.

Consult an expert on the disposal of recovered material for compliance with state, provincial, and/or local regulations.

SAFETY DATA SHEET

IRWIN Chalk – Blue

14. TRANSPORT INFORMATION

U.S. DOT: Not regulated

ADR/RID: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA: Ingredients are listed as air contaminants (29 CFR 1910.1000).

Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

TSCA (Toxic Substance Control Act): All components of this product are listed on the TSCA inventory.

CERCLA: Hazardous Substance, (40 CFR 302.4): Not Listed.
Extremely Hazardous Substance (40 CFR 355): Not Listed.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category:

"An immediate (acute) and chronic health hazard."

Chemicals subject to the reporting requirements of Section 313 or Title III of SARA and 40 CFR Part 372: None.

STATE REGULATIONS:

California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65)

This product contains the following Proposition 65 regulated materials known to the State of California to cause cancer or reproductive harm. The listed typical amounts are a result of their natural presence in the raw materials from which this product is produced.

Silica-crystalline quartz	equal to, or less than 1.0 percent
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CANADA WHIMS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the SDS contains all of the information required by the CPR.

WHIMS Classification: D2A

16. OTHER INFORMATION

The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC

SAFETY DATA SHEET

IRWIN Chalk – Blue

Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document

IRWIN Chalk – Indigo Blue, Permanent Staining

October 23, 2013

Revision 1

1. PRODUCT and COMPANY IDENTIFICATION

Commercial Product Name: **IRWIN Chalk – Indigo Blue, Permanent Staining**

Company: IRWIN Tools

Use of product: Snap line, mark

Emergency contact: 1-800-464-7946 8:00am-5:00pm Monday-Friday

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Non-combustible blue solid powder with no odor. Irritating to eyes, skin, and respiratory system. Exposure to large quantities of this material may cause acute irritation of eyes and difficulty breathing.

OSHA GHS Hazard Statements (Warning Label)

DANGER – May cause cancer (lung) (Category 1A)

Hazard Ratings:

Hazardous Material Identification System (HMIS):

Health 2*, Flammability 0, Reactivity 0 *chronic effects

National Fire Protection Association (NFPA):

Health 2, Flammability 0, Reactivity 0

Eye: May cause irritation. Chalk dust is discomforting and abrasive to the eyes.

Skin: Prolonged skin contact may cause irritation. When the product is used as intended, it is unlikely to cause discomfort.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.

Inhalation: Dust may be discomforting to the upper respiratory tract and lungs. When the product is used as intended, it is unlikely to cause discomfort.

Chronic: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.



Obtain special instructions before use. May cause cancer by inhalation. Avoid breathing dust or fume. Causes serious eye irritation. Causes mild skin irritation. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Value (%)	CAS No.	EC No.
Ultramarine blue	88-92	57455-37-5	none
Talc ¹	8-12	14807-96-6	238-877-9
Silica (crystalline quartz) ¹	0.1 - 1	14808-60-7	238-878-4

¹ Talc may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

SAFETY DATA SHEET

IRWIN Chalk – Indigo Blue, Permanent Staining

4. FIRST AID MEASURES

Inhalation: Remove from exposure and move to fresh air immediately. Encourage the patient to blow nose to ensure clear breathing passages. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Skin contact: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Launder contaminated clothing before wearing again. Wash affected area with water (and soap if available) Get medical aid in the event of irritation.

Eye contact: Do not rub eyes, rubbing may cause abrasions. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Wash mouth out with plenty of water. If the victim is conscious and alert, give 2-4 cupfuls of milk or water. Do not induce vomiting unless directed to do so by medical personnel. Get medical aid immediately.

Additional advice: Show this safety data sheet to the doctor in attendance

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Substance is noncombustible.

Explosion: No information found.

Specific hazards: Not considered to be a significant fire risk, however; the containers may burn, releasing carbon monoxide, and carbon dioxide.

Special protective equipment for Firefighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear appropriate personal protective equipment as specified in Section 8.

Environmental precautions: Do not allow this material to be released to the environment without proper governmental permits.

Methods for cleaning up: Recover the product whenever possible. Avoid generating dust when sweeping/shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal. Follow applicable OSHA regulations (29 CFR 1910.120)

7. HANDLING AND STORAGE

Storage: Store this product in a tightly-closed container in a dry, well-ventilated area away from incompatible substances.

Handling: Avoid creating, or breathing dust. Practice good personal hygiene, (hand washing, etc.) after using this product. Avoid contact with skin and eyes.

Packaging material: No information found.

SAFETY DATA SHEET

IRWIN Chalk – Indigo Blue, Permanent Staining

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	% by weight	Exposure Limit 8-Hour TWA ¹ (mg/m ³)		
			OSHA PEL	ACGIH TLV	NIOSH REL
Ultramarine blue	57455-37-5	88-92	Not Est.	Not Est.	Not Est.
Talc ⁴	14807-96-6	8-12	10 ^{2,5} ,3.3 ^{3,5}	2 ³	2 ³
Silica-Crystalline Quartz ⁴	14808-60-7	0.1-1.0	10 ^{2,5} ,3.3 ^{3,5}	0.05 ³	0.05 ³

¹ TWA = Time-weighted average

² Total dust.

³ Respirable dust.

⁴ Talc may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

⁵ Using the OSHA quartz formula, this PEL was calculated assuming crystalline silica content of 1.0% in this ingredient.

Exposure and Engineering Controls: Facilities storing or utilizing this material should have potable water available for washing eyes and skin. Use sufficient general area (or outdoor) ventilation. Local exhaust ventilation should be used if airborne concentrations of dust exceed limits cited in Section 8.

Personal protective equipment:

Hand protection: Wear protective gloves

Eye protection: Wear safety glasses, or chemical goggles in windy conditions or where eye contact is possible.

Respiratory protection: When engineering controls are not sufficient to reduce exposure, seek professional advice prior to respirator selection and use. Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Hygiene measures: Wash contaminated clothing before reuse.

Environmental exposure controls: No information found.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder
Color:	Indigo blue
Odor:	Odorless.
pH (at 10% solids):	No data available.
Boiling point/range:	No data available.
Melting point/range:	Decomposes.
Flash point:	No data available.
Evaporation rate:	No data available.
Vapor density:	No data available.
Solubility in water:	<0.0002 (Trace)
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Vapor pressure:	No data available.
Relative density (H ₂ O=1):	2.3.
Viscosity:	No data available.
Partition coefficient (n-octanol/water):	No data available.

SAFETY DATA SHEET

IRWIN Chalk – Indigo Blue, Permanent Staining

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, calcium oxide.

Materials to avoid: No known incompatibility with the normal range of industrial materials.

Conditions to avoid: No information.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Note: Toxicological effects described in this section are those that would be expected based on data from the components of this product.

Acute toxicity: No data reported.

Inhalation: (Silica, crystalline quartz) Human: LC_{Lo}: 300 µg/m³/ intermittent exposure over a 10-year period produced pulmonary system effects.

Skin contact: (Talc) Human: 0.3mg administered intermittently for 3 days produced mild skin irritation.

Eye contact: No data reported.

Ingestion: (Ultramarine blue) Rat: LD₅₀: 5,000 mg/kg.

Chronic toxicity/Carcinogenicity: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits.

Quartz – crystalline silica:

The International Agency for Research on Cancer (IARC) has designated this substance Group 1, "carcinogenic to humans".

The National Toxicology Program (NTP) has designated this substance: Group K "known to be a human carcinogen"

American Conference of Governmental Industrial Hygienists (ACGIH) has designated this substance A2; suspected human carcinogen. The agent is carcinogenic in experimental animals at dose levels, by route of administration, at sites of histologic type(s) or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

12. ECOLOGICAL INFORMATION

Bioaccumulation: No information found.

Ecotoxicity: Possibly hazardous short term degradation products are not likely. However, long term degradation may arise. The products of degradation may be more toxic.

13. DISPOSAL CONSIDERATIONS

Waste from residues of this product is not a hazardous waste according to U.S. Environmental Protection Agency (EPA) regulations. Disposal by landfill may be acceptable.

Consult an expert on the disposal of recovered material for compliance with state, provincial, and/or local regulations.

SAFETY DATA SHEET

IRWIN Chalk – Indigo Blue, Permanent Staining

14. TRANSPORT INFORMATION

U.S. DOT: Not regulated

ADR/RID: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA: Ingredients are listed as air contaminants (29 CFR 1910.1000).

Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

TSCA (Toxic Substance Control Act): All components of this product are listed on the TSCA inventory.

CERCLA: Hazardous Substance, (40 CFR 302.4): Not Listed.
Extremely Hazardous Substance (40 CFR 355): Not Listed.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category:

"An immediate (acute) and chronic health hazard."

Chemicals subject to the reporting requirements of Section 313 or Title III of SARA and 40 CFR Part 372: None.

STATE REGULATIONS:

California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65)

This product contains the following Proposition 65 regulated materials known to the State of California to cause cancer or reproductive harm. The listed typical amounts are a result of their natural presence in the raw materials from which this product is produced.

Silica-crystalline quartz equal to, or less than 1.0 percent

CANADA WHIMS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the SDS contains all of the information required by the CPR.

WHIMS Classification: D2A

16. OTHER INFORMATION

The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials

SAFETY DATA SHEET

IRWIN Chalk – Indigo Blue, Permanent Staining

Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

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