

Acetic Acid 80%

Issue date 02/10/2017

Reviewed on 09/21/2018

1. Identification

- Product Identifier
- Name of the product: Acetic Acid 80%
- **Recommended Use:** Industrial applications
- Details of the Supplier of the Safety Data Sheet:
- Manufacturer/Supplier:

Ramsay Browne Chemical & Company PO Box 6425 Moraga, CA 94570

General Number: (925) 280-1661

• Emergency telephone number: (925) 280-1661

2. Hazard(s) Identification





- Classification of substance or mixture:
- **Product definition:** Mixture
- Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008
- Flammable liquid Category 3 [H226]
- Skin corrosion Category 1A [H314]
- **Signal Word**: Danger
- Hazard statements
- **H226** Flammable liquid and vapor
- H314 Causes severe skin burns and eye damage
- Precautionary statements:
- Prevention:
- P210 Keep away from heat, open flame and hot surfaces. No smoking
- **P233** Keep container tightly closed
- P240 Ground and bond container and receiving equipment
- **P241+P242** Use explosion-proof electrical, ventilating, lighting and mixing equipment; use only non-sparking tools



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2. Hazard(s) Identification (continued)

- **P243** Take precautionary measures against static discharge
- **P260** Do not breathe vapor, fumes or mist
- P264 Wash hands and other skin areas exposed to material thoroughly after handling
- **P280** Wear protective gloves, protective clothing, eye protection and face protection
- Response:
- **P370+P378** In case of fire: Use water spray or fog, foam, dry chemical or carbon dioxide for extinction
- **P301+P330+P331+P310** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor
- **P303+P361+P350** IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with water or shower
- **P304+P340+P310** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor
- P305+P351+P338+P310 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 or doctor
- **P363** Wash contaminated clothing before reuse
- P321 Specific treatment: Contact a POISON CENTER or doctor. Refer to Section 4 of this SDS
- Storage:
- **P405+P403+P233+P235** Store locked up in a well-ventilated place. Keep container tightly closed. Keep cool
- Disposal:
- P501 Dispose of contents and containers in accordance with national and local regulations.

3. Composition / Information on ingredients

CAS #	Percentage	Chemical Name
64-19-7	50-80%	Glacial Acetic Acid

There are no ingredients present in this product 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.



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4. First-aid measures

- Description of first aid measures:
- **Inhalation:** If product vapor or mist causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight fitting clothing such as a collar, tie, belt or waistband. Seek immediate medical attention.
- **Eyes:** Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after the first 2 minutes and continue rinsing. Seek immediate medical attention, preferably from an ophthalmologist.
- **Skin:** Flush skin with large amounts of water while removing contaminated clothing, and continue rinsing for at least 15 minutes. Wash contaminated clothing thoroughly before reuse. Discard contaminated shoes. Seek immediate medical attention.
- **Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures, if any. Give 2 glasses of water or milk to drink if the victim is conscious, alert and able to swallow. DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. To prevent aspiration of swallowed product, lay victim on one side with the head lower than the waist. Obtain medical attention immediately.
- Most important symptoms and effects, both acute and delayed:
- Potential health symptoms and effects:
- **Eyes:** Causes burns serious eye damage. Symptoms may include redness, swelling, pain, tearing, burns, blurred vision, corneal clouding, permanent eye damage and possible blindness. Mist or vapor can cause severe eye irritation and eye damage.
- **Skin:** Causes severe skin irritation and burns. May be harmful if absorbed through the skin. Contact with skin may cause blackening and hyperkeratosis of the skin and hands.
- Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract with mucousal irritation, cough and shortness of breath. Exposure may lead to bronchitis, pharyngitis, edemas in the respiratory tract and dental erosion. Effects may be delayed. May be absorbed through the lungs.
- Ingestion: Harmful if swallowed. Causes burns to the lips, mouth, throat and gastrointestinal tract. May cause severe and permanent damage to the digestive tract. Causes severe pain, nausea, vomiting, diarrhea and shock. May cause damage to the kidneys and kidney failure. Rapidly absorbed from the gastrointestinal tract. Pulmonary failure is possible after aspiration of vomit.
- **Chronic:** Chronic exposure may cause erosion of dental enamel, bronchitis, eye irritation, darkening of the skin and chronic inflammation of the respiratory tract. May cause occupational asthma. Effects may be delayed. Skin sensitization to acetic acid is rare, but has



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4. First-aid measures (continued)

occurred. Persons with pre-existing skin disorders or impaired respiratory or pulmonary function may be at increased risk to the effects of this substance.

- Indication of any immediate medical attention and special treatment needed:
- Advice to Doctor and Hospital Personnel: Treat symptomatically and supportively.

5. Emergency response procedures

- Extinguishing media:
- **Suitable methods of extinction:** Use equipment media such as water fog or spray, dry chemical, carbon dioxide or foam.
- **Unsuitable methods of extinction:** None known
- Special hazards arising from the substance or mixture
- Flammable liquid and vapor. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and can travel along the ground to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Containers may explode if exposed to fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Symptoms of overexposure to these gases may not be apparent. Seek medical advice.
- **Explosion hazards:** Vapor may form an explosive mixture with air at elevated temperatures, especially in confined spaces.
- Advice for firefighters: Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

6. Handling and storage

- Personal precautions, protective equipment and emergency procedures:
- Clean up spills immediately. Wear appropriate protective clothing designated in Section 8.
 Approach spill from upwind. Remove all sources of ignition. Ventilate the area. Spill creates a slip hazard.
- Environmental precautions:
- Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.
- Methods and materials for containment and cleaning up:
- Cover drains and contain spill. Do not flush spill to the drain. Carefully neutralize the spill
 with soda ash (sodium carbonate) or calcium carbonate. Cover spill with a large quantity of
 inert absorbent. Do not use combustible material such as sawdust. Collect product using
 non-sparking tools and place into an approved container for proper disposal. Do not use a



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6. Handling and storage (continued)

metal container for disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Dispose of via a licensed waste disposal contractor. Contaminated absorbent may pose the same hazard as the spilled product.

• **Reference to other sections:** See Section 13 for additional waste treatment information.

7. Physical and chemical properties

- Precautions for safe handling:
- Wear all appropriate personal protective equipment specified in Section 8. Do not
 get in eyes or on skin or clothing. Do not breathe vapor or mist. If normal use of
 material presents a respiratory hazard, use only adequate ventilation or wear an
 appropriate respirator. Wash contaminated clothing before reuse. Destroy
 contaminated shoes.
- Advice on protection against fire and explosion: Keep away from heat and incompatible materials.
- Conditions for safe storage, including any incompatibilities:
- Store in original container in a dry, cool, well-ventilated area away from incompatible materials (refer to Section 10) and food and drink. Ground and bond containers when transferring material. Transfer only to approved containers having correct labeling. DO NOT store in metal containers. Keep containers tightly closed when not in use. Protect container from physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat or ignition sources. Use appropriate containment to avoid environmental contamination. Ventilate enclosed areas. Do not take internally. Keep locked up and out of reach of children.
- **Specific end uses:** Apart from the uses mentioned in Section 1, no other specific uses are stipulated.

8. Exposure Controls / Personal Protection

- Exposure controls:
- **Engineering measures:** Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable.
- **Individual protection measures:** Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handles.



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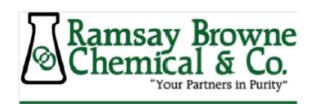
8. Exposure Controls / Personal Protection (continued)

The chemical resistance of the protective equipment should be enquired at the representative supplier.

- **Hygiene measures:** Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.
- **Eye/face protection:** Wear chemical splash goggles or safety glasses with unperforated side shields and a face shield during use.
- **Hand Protection:** Wear Chloroprene gloves or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.
- **Skin protection:** Wear protective clothing. Wear protective boots if the situation requires.
- Respiratory protection: Always use an approved respirator when vapors/aerosols are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.
- **Environmental exposure controls:** Do not empty into drains.
- PPE must not be considered a long-term solution to exposure control. PPE usage must be
 accompanied by employer programs to properly select, maintain, clean fit and use. Consult a
 competent industrial hygiene resource to determine hazard potential and/or the PPE
 manufacturers to ensure adequate protection.
- Safety Glasses
- Gloves
- Protective Apron

9. Physical and Chemical Properties

- **Appearance**: Clean, colorless liquid
- **Odor:** Pungent, vinegar-like
- **Odor Threshold:** 0.23 100.1ppm
- Molecular Weight: 60.05 g/mol (Acetic Acid)
- Chemical Formula: C2H4O2
- **pH**: 2.7 (1 M aqueous solution)
- Freezing/Melting Point, Range: 17°C (62.6°F)
- **Initial Boiling Point:** 116-118°C (241-244°F)



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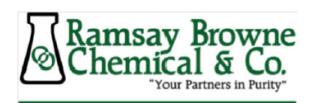
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9. Physical and Chemical Properties (continued)

- **Evaporation Rate:** 0.97 (n-BuOAc = 1)
- Flammability (solid, gas): Not applicable
- **Flash Point:** 71-91°C (160-196°F)
- Autoignition Temperature: 516°C (960.8°F)
- **Decomposition Temperature:** No data available
- Lower Explosive Limit (LEL): 4%(v)
- Upper Explosive Limit (UEL): 19.9% (v)
- Vapor Pressure: 15.7 mm Hg @ 25°C
- **Vapor Density:** 2.1 (Air = 1)
- Specific Gravity: 1.05 @ 20°C
- Viscosity: 1.22 cps @ 20°C
- Solubility in Water: Miscible
- Partition Coefficient: n-octanol/water: log Pow = -0.17 @ 25°C
- Oxidizing Properties: Not applicable
- **Explosive Properties:** Not applicable
- Volatiles by Weight @ 21°C: >80%
- Other Data: May be corrosive to metals

10. Other information

- Reactivity: Stable when used under recommended handling and storage conditions
- Chemical Stability: Stable under recommended (ambient) storage conditions
- **Possibility of hazardous reactions:** Generates hydrogen gas in contact with metals. Hazardous polymerization will not occur.
- **Conditions to avoid:** Heat, flames, sources of ignition and contact with incompatible materials.
- **Incompatible materials:** Strong oxidizing agents, strong alkalis, strong bases, metals, amines, halogens, alcohols, peroxides, peroxi compounds, metal salts, alcohols, potassium permanganate, acetaldehyde, carbonates, nonmetallic halides. Incompatible with some plastics, rubbers and coatings.
- Hazardous decomposition products: Thermal decomposition products include oxides of carbon, hydrogen gas, irritating and toxic fumes.



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11. Toxicological Information

- Information on toxicological effects:
- Acute Oral Toxicity: LD50, rat: 3,310 mg/kg
- Acute inhalation toxicity: LC50, rat: 11.40 mg/m3, 4 h
- **Acute dermal toxicity:** LC50, rabbit: 1,112 mg/kg
- **Skin irritation/corrosion:** Cause severe skin irritation and burns.
- Eye irritation/corrosion: Causes burns and permanent eye damage. Risk of blindness
- **Sensitization:** No data available
- **Genotoxicity in vitro:** No data available
- Mutagenicity: No data available
- Specific organ toxicity single exposure: No data available
- **Specific organ toxicity repeated exposure:** No data available
- **Aspiration hazard:** No data available
- **Further information:** This product contains no substances present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confirmed carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates it causes adverse developmental or fertility effects.
- Handle in accordance with good industrial hygiene and safety practice.

12. Ecological Information

- **Toxicity:** Large discharges of Glacial Acetic Acid to the environment may decrease the pH of aquatic systems to a value <2, which may be fatal to aquatic life and soil micro-organisms.
- Acute and prolonged toxicity to fish:
- LC50 Lepomis macrochirus (Bluegill/Sunfish), 96 h: 75 mg/l
- LC50 Pimephales promelas (Fathead minnow), static, 96 h: 88 mg/l
- Acute toxicity to aquatic invertebrates:
- EC50 Daphnia magna (Water flea), 24 48 h: 32 47 mg/l
- Acute and prolonged toxicity to Aquatic plants:
- IC50 Scenedesmus quadricauda (Green algae), 16 h: 4,000 mg/l
- **Persistence and degradability:** Readily biodegradable
- **Bioaccumulation potential:** Product will not bioaccumulate



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12. Ecological Information (continued)

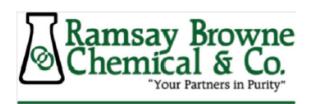
- **Mobility in soil:** No data available
- Results of PBT and vPvB assessment: Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII
- Other adverse effects:
- Additional ecological information: Do not allow material to run into surface waters, wastewater or soil. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal Considerations

- Waste treatment methods:
- Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. Transport Information

- **Note:** Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100-177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.
- US DOT (Domestic Ground Transportation)
- **Proper Shipping Name:** Acetic acid solution
- Hazard Class: 8
 UN/NA: UN2790
 Packing Group: II
 NAERG: Guide #132
- Packaging Authorization: Non-Bulk: 49 CFR 173.202; Bulk: 173.242
- Packaging Exceptions: 49 CFR 173.154



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14. Transport Information (continued)

- IMO/IMDG (Water Transportation)
- **Proper Shipping Name:** Acetic acid solution
- Hazard Class: 8
 UN/NA: UN2790
 Packing Group: II
 Marine Pollutant: No

• **EMS Number:** F-A, S-B

- ICAO/IATA (Air Transportation)
- **Proper Shipping Name:** Acetic acid solution
- Hazard Class: 8UN/NA: UN2790Packing Group: II
- Quantity Limitations: 49 CFR 173.27 and 175.75 Cargo Aircraft Only: 30 I;

Passenger Aircraft: 1 I

- RID/ADR (Rail Transportation)
- **Proper Shipping Name:** Acetic acid solution
- Hazard Class: 8UN/NA: UN2790Packing Group: II

15. Regulatory Information

- Safety, health and environmental regulations/legislation specific for substance or mixture
- U.S. Federal Regulations:
- **OSHA Hazard Communication Standard:** This substance is classified as hazardous in accordance wit hOSHA 29 CFR 1910-1200
- **OSHA Process Safety Management Standard:** This product is not regulated under OSHA PSM Standard 29 CFR 1910.119
- **EPA Risk Management Planning Standard:** This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68
- **EPA Federal Insecticide, Fungicide and Rodenticide Act:** This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150
- **Toxic Substance Control Act (TSCA) Inventory:** This substance is listed on the TSCA Inventory. It is not subject to TSCA 12(b) Export Notification.



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15. Regulatory Information (continued)

- Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2) and Chemical Code Number: Not listed
- Drug Enforcement Administration (DEA) List s1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12 ©) and Code Number: Not listed
- Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: Not listed
- Superfund Amendments and Reauthorization Act (SARA)
- **SARA Section 313/312 Hazard Categories:** Fire Hazard, Acute Health Hazard, Chronic Health Hazard
- **SARA 313 Information:** None of the components of the product exceed the threshold (de minimis) reporting requirements of Section 13 of the Emmergency Planning an Community Right-to Know Act of 1986
- SARA 302/304 Extremely Hazardous Substance: None of the components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA
- SARA 302/3304 Emergency Planning & Notification: None of the components of the product exceed the threshold (de minimis) reporting levels established by of these sections f Title III of SARA
- Comprehensive Response Compensation and Liability Act (CERCLA): This product contains the following CERCLA reportable substance(s): Acetic Acid (CAS #64-19-7), RQ 2,267.96 kg (5,000 lbs)
- Clean Air Act (CAA):
- This product does not contain any chemicals listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b)
- This product does not contain any Class 1 Ozone depletors
- This product does not contain any Class 2 Ozone depletors
- Clean Water Act (CWA):
- Acetic Acid (CAS #64-19-7) is listed as a Hazardous Substance under the CWA
- None of the chemicals in this product are listed as Priority Pollutants under the CWA
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA
- U.S. State Regulations:
- California Prop 65, Safe Drinking Water an Toxic Enforcement Act of 1986: This product contains no chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm



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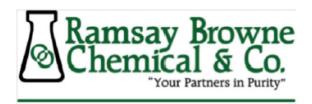
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15. Regulatory Information (continued)

- Other U.S. State Inventories: Glacial Acetic Acid (CA #64-19-7) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, DE, FL, IS, MA, MN, NC, NJ, NY, PA, RI, WA, WI
- WHMIS Hazard Classification:
- E-Corrosive
- B3 Flammable liquid with flash points greater than 38°C (100°F) but inferior to 93°C (199.4°F)
- Canadian National Pollutant Release Inventory (NPRI): None of the substances in this product are listed on the NPRI
- European Economic Community:
- WGK, Germany (Water danger/protection): 1
- Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List	No
	(NDSL	
Europe	Invesntory of New and Existing	Yes
	Chemicals (EINECS)	
United States	Toxic Substance Control Act	Yes
	(TSCA)	
Australia	Australian Inventory of Chemical	Yes
	Substances (AICS)	
New Zealand	New Zealand Inventory of	Yes
	Chemicals (NZIoC)	
China	Inventory of Existing Chemical	Yes
	Substances in China (IECSC)	
Japan	Inventory of Existing and New	Yes
	Chemical Substances (ENCS)	
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippines Inventory of Chemicals	Yes
	and Chemical Substances (PICCS)	

- *Yes All components of this product are in compliance with the inventory requirements administered by the governing country
- No One or more components of this product are not on the inventory or are exempt from listing



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15. Regulatory Information (continued)

 Chemical safety assessment: For this product a chemical safety assessment was not carried out

16. Other Information

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HEALTH			
FIRE	2		
REACTIVITY	0		
PERSONAL PROTECTION	С		

HMIS Hazard Rating Legend:

0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe, * = Chronic Health Hazard

Abbreviation Kev:

ACGIH American Conference of Governmental Industrial Hygienists

ADR Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)

CAS Chemical Abstract Services

CFR Code of Federal Regulations

DOT Department of Transportation

EMS Guide Emergency Response Procedures for Ships Carrying Dangerous Goods

EPA Environmental Protection Agency

ERG Emergency Response Guide Book

FDA Food and Drug Administration

GHS Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

HCS Hazard Communication Standard

IARC International Agency for Research on Cancer

IATA International Air Transport Association half maximal

ICAO International Civil Aviation Organization

IDLH Immediately Dangerous to Life and Health

IMDG International Maritime Dangerous Goods

IMO International Maritime Organization

Mppcf Millions of Particles Per Cubic Foot

NA North America

NAERG North American Emergency Response Guide Book

NIOSH National Institute for Occupational Safety

NTP National Toxicology Program



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16. Other Information

OSHA Occupational Safety and Health Administration

PBT Persistent, Bioaccumulating and Toxic

PEL Permissible exposure limit

PMCC Pensky-Martens Closed Cup

Ppm Parts Per Million

RCRA Resource Conservation and Recovery Act

RID Dangerous Goods by Rail

RQ Reportable Quantity

TCC/Tag Tagliabue Closed Cup

TLV Threshold Limit Value

TSCA Toxic Substance Control Act

TWA Time-weighted Average

UN United Nations

VOC Volatile Organic Compounds

vPvB Very Persistent and Very Bioaccumulating

WHMIS Workplace Hazardous Materials Information System

Disclaimer of Responsibility

The information on this SDSD was obtained from sources which we believe are reliable. However, the information is provided without any warranty expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.