



Univar USA Inc Material Safety Data Sheet

MSDS No:

Version No:

Order No:

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

Annotation:

SDS Name: Kalama* Benzoic Acid Technical

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Safety Data Sheet - North American

Effective date: 04/18/2013

SECTION 1 - Identification

Product identifiers:

Product trade name: Kalama* Benzoic Acid Technical
Company product number: BZOHCPTECH
Other means of identification: Benzenecarboxylic acid, Benzeneformic acid, Phenylcarboxylic acid, Phenylformic acid, Benzenemethanoic acid, Carboxybenzene

Recommended use of the chemical and restrictions on use:

Uses: Industrial
Restrictions on use: None identified

Details of the supplier:

Manufacturer/Supplier: Emerald Performance Materials, LLC
2020 Front Street, Suite 100
Cuyahoga Falls, Ohio 44221
United States
Telephone: +001-330-916-6700
FAX: +001-330-916-6734

For further information about this SDS: Email: product.compliance@emeraldmaterials.com

Emergency telephone number: ChemTel (24 hours): USA: 1-800-255-3924; International: +001-813-248-0585. Alternate: Chemtrec (24 hours): USA: 1-800-424-9300; International: +001-703-527-3887.

SECTION 2 - Hazard(s) identification

Potential physical and environmental effects: May form combustible dust concentrations in air.

Potential health effects:

Acute health effects: Causes serious eye damage. May be harmful if swallowed. Causes skin irritation. Dust inhalation may cause respiratory irritation. Ingestion may cause irritation.

Chronic health effects: Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

See Section 11 for toxicological information.

SECTION 3 - Composition / information on ingredients

Substance:

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Chemical Name

Benzoic Acid

CAS Number

000065-85-0

Weight %

60-100

Notes: No Additional Information

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits. Exact percentage values for components are proprietary in accordance with 29 CFR 1910.1200(i).

SECTION 4 - First-aid measures

Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Get medical attention immediately.

Skin contact: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

Most important symptoms/effects, acute and delayed: Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

Indication of immediate medical attention and special treatment needed, if necessary: Treat symptomatically.

SECTION 5 - Fire-fighting measures

NFPA flammability class: N/A (Combustible solid)

Extinguishing media:

Suitable: Use water spray, dry chemical, or foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in reignition.

Unsuitable: Avoid hose streams or any method which will create dust clouds.

Specific hazards arising from the chemical:

Unusual fire/explosion hazards: Concentrated dust/air combinations may produce explosive conditions. As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. As a precaution, implement standard safety measures for handling finely divided organic powders. See Section 7 for suggested measures.

Hazardous combustion products: See section 10 Hazardous decomposition products for additional information.

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Special protective equipment and precautions for fire-fighters: Water spray (fog) can be used to absorb heat and to cool and protect surrounding exposed material. Avoid hose streams or any method which will create dust clouds. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6 - Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. If inhalation of dust cannot be avoided, wear an approved particulate respirator. Personal Protective Equipment must be worn.

Environmental precautions: Do not flush product into public sewer, water systems or surface waters.

Methods and materials for containment and cleaning up: Contain spill. Wear proper personal protective clothing and equipment. Using care to avoid dust generation, vacuum or sweep into a closed container for reuse or disposal. Use approved industrial vacuum cleaner for removal. Avoid causing dust. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

SECTION 7 - Handling and storage

Precautions for safe handling: As with any chemical product, use good laboratory/workplace procedures. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye and skin contact. Avoid drinking, tasting, swallowing or ingesting this product. Avoid routine inhalation of dust of any kind. Exercise care when emptying containers, sweeping, mixing or doing other tasks which can create dust. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area.

As a precaution to control dust explosion potential, implement the following safety measures: Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). In general, dust of organic materials is a static charge generator which may be ignited by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. Bond, ground and properly vent conveyors, dust control devices and other transfer equipment. Use spark-proof tools and equipment. Prohibit flow of polymer, powder or dust through non-conductive ducts, vacuum hoses or pipes, etc.; only use grounded, electrically conductive transfer lines when pneumatically conveying product. Good housekeeping and controlling of dusts are necessary for safe handling of product. Prevent accumulation of dust (e.g., well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces, etc.). A properly engineered explosion suppression system must be considered. See standards such as the National Fire Protection Association NFPA 654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids"; NFPA 69, "Standard on Explosion Prevention Systems"; NFPA 68, "Standard on Explosion Protection by Deflagration Venting"; NFPA 77, "Recommended Practice on Static Electricity" and other standards as the need exists.

Conditions for safe storage, including any incompatibilities: Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning.

SECTION 8 - Exposure controls / personal protection

Control parameters:

Occupational exposure limits:

<u>Chemical Name</u>	<u>ACGIH - TWA -----</u>	<u>ACGIH - STEL -----</u>
Benzoic Acid	N/E	N/E

PNOS: ACGIH has recommended the following exposure limits for Particulates (insoluble or poorly soluble) not otherwise specified (PNOS): 10 mg/m³ TWA (inhalable particles), 3 mg/m³ TWA (respirable particles).

<u>Chemical Name</u>	<u>OSHA - PEL -----</u>	<u>OSHA - STEL -----</u>	<u>OSHA Ceiling</u>	<u>Mexico</u>
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Benzoic Acid N/E N/E N/E N/E

OSHA exposure limits for Particulates not otherwise regulated are 15 mg/m3 TWA (total dust) and 5 mg/m3 TWA (respirable fraction).

N/E=Not established (no exposure limits established for listed substances for listed country/region/organization).

Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). Prohibit flow of powder or dust through non-conductive ducts, vacuum hoses, or pipes, etc. Bond, ground, and properly vent conveyors, dust control devices and other transfer equipment. (Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA.) (<http://www.acgih.org/home.htm>).

Individual protection measures, such as personal protective equipment (PPE):

Eye/face protection: Safety glasses or goggles required.

Skin and body protection: Wear chemical resistant (impervious) gloves. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: If inhalation of dust cannot be avoided, wear an approved particulate respirator. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

Further information: Eyewash fountains and safety showers are recommended in the work area.

SECTION 9 - Physical and chemical properties

Form	Chips/ granules/ powder	pH	2.8 (saturated solution)
Appearance	White to tan	Relative density	1.32 @ 24 °C
Odor	Characteristic	Partition coefficient (n-octanol/water)	1.88
Odor threshold	Not Available	%Volatile by weight	Not Available
Solubility in water	Slight	VOC	Not Available
Evaporation rate	Not Available	Flash point	121 °C (250 °F) Closed Cup
Vapor pressure	Negligible @ 20 °C	Boiling Point °C	249 °C @ 760 mm Hg
Vapor density	4.21 (Air = 1)	Boiling Point °F	480 °F
Viscosity	1.2 Centipoise @ 130 °C	Auto-ignition temperature	573 °C (1063 °F)
Melting point / Freezing point	122 °C (252 °F)	Flammability (solid, gas)	Not flammable (may form combustible dust-air mixtures)
Oxidizing properties	Not oxidizing	Flammability or explosive limits	LFL/LEL Not Available UFL/UEL Not Available
Decomposition temperature	Not Available		

Other information: Amounts specified are typical and do not represent a specification.

Dust combustibility data:

Particle size variation is considered a critical factor in regards to dust explosion hazard information. Results applicable as

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follows. Sample tested is not typical of product.

- Autoignition temperature: 617-620°C (crystalline granules, unknown particle size)
- Minimum ignition energy (dust cloud): 5-10 mJ (particle size <75 um, 0.2% moisture content)
- Minimum explosive concentration: 20-30 g/m³ (crystalline granules, unknown particle size)
- Volume resistivity (ambient relative humidity): 7.4 x 10⁽⁹⁾ ohm-m (flakes, unknown particle size)
- Volume resistivity (low relative humidity): 1.2 x 10⁽¹²⁾ ohm-m (flakes, unknown particle size)
- Charge decay (ambient relative humidity): 37 seconds (flakes, unknown particle size)
- Charge decay (low relative humidity): 43 seconds (flakes, unknown particle size)

SECTION 10 - Stability and reactivity

Reactivity: None known.

Chemical stability: This product is stable.

Possibility of hazardous reactions: Hazardous polymerization will not occur. Water solutions of product may produce hydrogen gas in contact with aluminum or some other metals.

Conditions to avoid: Excessive heat and ignition sources. Avoid dust formation. Avoid static discharge.

Incompatible materials: Avoid strong acids, bases, and oxidizing agents. Avoid contact with reducing agents. Avoid contact with metals.

Hazardous decomposition products: Carbon dioxide and carbon monoxide.

Notes: No Additional Information.

SECTION 11 - Toxicological information

Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Information on likely routes of exposure:

General: No Additional Information

Eyes: Causes serious eye damage. Eye contact may cause severe irritation with redness, pain, and blurred vision.

Skin: Causes skin irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation: Dust inhalation may cause respiratory irritation.

Ingestion: May be harmful if swallowed. Ingestion may cause irritation.

Symptoms/effects, acute and delayed: Irritation.

Acute toxicity information: Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>LC50 Inhalation</u>	<u>Species</u>	<u>LD50 Oral</u>	<u>Species</u>	<u>LD50 Skin</u>	<u>Species</u>
Benzoic Acid	>12.2 mg/L (4 hours, no mortalities)	Rat/ adult	2565 mg/kg	Rat/ adult	>2000 mg/kg	Rabbit/ adult

<u>Chemical Name</u>	<u>LC50 Inhalation</u>	<u>Species</u>	<u>LD50 Oral</u>	<u>Species</u>	<u>LD50 Skin</u>	<u>Species</u>
Benzoic Acid	>26 mg/m ³ (1 hour, no mortalities)	Rat/ adult	2250 mg/kg	Mouse	>5000 mg/kg	Rabbit/ adult

Corrosion/Irritation/Sensitization information:

Skin corrosion/irritation: Causes skin irritation (Category 2). BENZOIC ACID: Benzoic acid and its salts are capable of

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causing non-immune immediate contact reactions (NIICR) and non immunogenic contact urticaria (NICU), also known as pseudoallergy. Per definition, non-immunologic immediate contact reactions are considered irritant reactions.

Serious eye damage/irritation: Causes serious eye damage (Category 1).

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID: Not a skin sensitizer in the mouse local lymph node assay or Buehler guinea pig test.

Chemical Name	Eye Irritation	Species/Dose	Skin Irritation	Species/Dose	Skin Sensitization	Species/Dose
Benzoic Acid	Moderate-severe irritant	Rabbit/ adult	Irritant	Guinea pig/ adult	Non-sensitizer	Guinea pig and Mouse local lymph node assay

Carcinogenicity/Mutagenicity/Reproductive toxicity information:

Carcinogenicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: NOAEL (carcinogenicity), rat (sodium benzoate): >1000 mg/kg bw/day. In a 2-year animal feeding study (2% in food), sodium benzoate was not carcinogenic.

Carcinogenic status: Not listed or regulated by IARC, NTP, OSHA, or ACGIH.

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: Studies of benzoic acid and sodium benzoate in the Ames point mutation assay do not show evidence of mutagenicity. However, some studies have been reported to be positive in the less commonly used Bacillus subtilis recombination assay. In a number of cases adverse effects on the chromosome could be noticed, however also negative and/or equivocal results were reported. Sodium benzoate showed no genotoxicity during in-vivo testing.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: Reproductive toxicity (benzoic acid), 4-generation oral study in rats: NOAEL (no-observed adverse-effect-level) 500 mg/kg bw/day. Developmental toxicity (sodium benzoate), oral, rats and mice: NOAEL of >=175 mg/kg bw/day can be established for developmental effects.

Specific target organ toxicity (STOT):

STOT-single exposure: Not classified (based on available data, the classification criteria are not met).

STOT-repeated exposure: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID: Repeated dose toxicity studies: NOAEL (No-Observed-Adverse-Effect-Level), dermal, rabbit - 2500 mg/kg bw/day; NOAEC (No-Observed-Adverse-Effect-Concentration), inhalation, rat - 250 mg/m3 (systemic effects); <=25 mg/m3 (local). Local effects including nasal redness, pulmonary fibrosis and inflammatory cell infiltrates in the lungs were observed at lowest dose of 25 mg/m3 and can be attributed to the irritant properties and to the physico-chemical properties of fine low-solubility particles of benzoic acid. READ-ACROSS (SODIUM BENZOATE): Repeated dose oral toxicity studies for salts of benzoic acids: NOAEL (no-observed-adverse-effect-level) >1000 mg/kg bw/day. BENZOIC ACID AND BENZOATE SALTS: At higher doses (oral) increased mortality, reduced weight gain, liver and kidney effects were observed.

Aspiration hazard: Not classified (technical impossibility to obtain the data).

Other toxicity information:

No additional information available.

SECTION 12 - Ecological information

Ecotoxicity:

Chemical Name	Fish 96 hour LC50	Species	Fish 96 hour LC50	Species	Fish Chronic NOEC	Species
Benzoic Acid	44.6 mg/L	Lepomis macrochirus (Bluegill)	47.3 mg/L	Oncorhynchus mykiss (Rainbow trout)	>120 mg/L (28 days)	Oncorhynchus mykiss (Rainbow trout)

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<u>Chemical Name</u>	<u>Invertebrates 48 hour EC50</u>	<u>Species</u>	<u>Invertebrates 24 hour EC50</u>	<u>Species</u>	<u>Invertebrates Chronic NOEC</u>	<u>Species</u>
Benzoic Acid	>100 mg/L	Daphnia magna	102-500 mg/L	Daphnia magna	>=25 mg/L (21 days)	Daphnia magna

<u>Chemical Name</u>	<u>Algal 96 hour EC50</u>	<u>Species</u>	<u>Algal 72 hour EC50</u>	<u>Species</u>	<u>Algal Chronic NOEC</u>	<u>Species</u>
Benzoic Acid	N/E		>33.1 mg/L	Pseudokirchneriella subcapitata	EC10=3.4 mg/L (72 hours)	Pseudokirchneriella subcapitata

Persistence and degradability:

<u>Chemical Name</u>	<u>Biodegradation</u>
Benzoic Acid	Readily biodegradable (OECD 311)

Bioaccumulative potential:

<u>Chemical Name</u>	<u>Bioconcentration Factor (BCF)</u>	<u>Log Kow</u>
Benzoic Acid	N/E	1.88

Mobility in soil:

<u>Chemical Name</u>	<u>Mobility in soil (Koc/Kow)</u>
Benzoic Acid	15.49 (calculated)

Other adverse effects: No Additional Information

SECTION 13 - Disposal considerations

Although this product is not defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261), recognize that in appropriate dust/air ratio, dust cloud in air may have explosion potential. Incinerate or landfill waste in a properly permitted facility in accordance with federal, state and local regulations.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14 - Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

UN number: N/A

UN proper shipping name:

Not regulated - See Bill of Lading for Details

Transport hazard class(es):

U.S. DOT hazard class:	N/A
Canada TDG hazard class:	N/A
Europe ADR/RID hazard class:	N/A
IMDG Code (ocean) hazard class:	N/A
ICAO/IATA (air) hazard class:	N/A

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

Packing group: N/A

Environmental hazards:

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Marine pollutant: Not Applicable

Hazardous substance (USA): BENZOIC ACID: When shipped over 5000 pounds (2270 kg.) in a single package: UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Benzoic acid), 9. PG III, RQ.

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

Special precautions for user: Not Applicable

Notes: This material is not regulated in packages containing less than the package reportable quantity (RQ).

SECTION 15 - Regulatory information

Safety, health and environment regulations/legislation specific for the product:

U.S. federal and state regulations/legislation:

This MSDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Reportable Quantity (RQ):

<u>Chemical Name</u>	<u>-- lbs --</u>	<u>-- kg --</u>
Benzoic Acid	5000.00	2272.73

U.S. Superfund Amendments and Reauthorization Act (SARA):

SARA Section 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 and 40 CFR 372:

None Known

California Proposition 65:

Warning: The following ingredients present in the product are known to the state of California to cause Cancer: None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards: None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Notes: No Additional Information

The chemical identity of some or all components present is confidential business information (trade secret) and is being withheld as permitted by 29CFR1910.1200 (i).

Notes: No Additional Information

Canada regulations/legislation:

Canadian Ingredient Disclosure List: The following components are on the Canadian Ingredient Disclosure List (WHMIS): Benzoic Acid

Canadian Workplace Hazardous Material Information System (WHMIS) classification: D2B

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Notes: No Additional Information

Mexico regulations/legislation:

This SDS contains the information required by NOM-018-STPS-2000 Workplace Hazardous Chemical Substances Communication and Identification Standard.

Chemical inventories:

Regulation	Status
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
European Inventory of Existing Chemical Substances (EINECS):	Y
European List of Notified Chemical Substances (ELINCS):	N
Europe REACH (EC) 1907/2006:	N
U.S. Toxic Substances Control Act (TSCA):	Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed.

Chemical inventory notes: No Additional Information

Notes: No Additional Information

SECTION 16 - Other information

Notes: No Additional Information

MSDS Revision date: 04/18/2013

HMIS Rating

Health: 2 Flammability: 1 Reactivity (Stability): 0 Personal Protection: X

NFPA Rating

Health: 2 Flammability: 1 Instability: 0

Key: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme. An asterisk appearing after the HMIS Health numerical rating denotes a chronic hazard.

Hazardous Materials Identification System (HMIS), National Paint and Coating Association, rating applies to product "as packaged" (i.e., ambient temperature). Ratings are based upon HMIS® III and NFPA 704 (2007). An asterisk appearing after the HMIS Health® III numerical rating denotes a chronic hazard. National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

Legend:

- * : Trademark owned by Emerald Performance Materials, LLC.
- ACGIH: American Conference of Governmental Industrial Hygienists
- A1: Confirmed human carcinogen
- A2: Suspected human carcinogen
- A3: Animal carcinogen
- ADR/RID: European dangerous goods transport road and rail regulations
- ATE: Acute Toxicity Estimate
- bw: body weight
- C: Ceiling Limit
- CAS No: Chemical Abstract Service Registry Number
- CERCLA: Comprehensive Environmental Resonse, Compensation and Liability Act (U.S. EPA)

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DOT: Department of Transportation (U.S.)
EPA: Environmental Protection Agency (U.S.)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
Group 1: Carcinogenic to humans
Group 2A: Probably carcinogenic to humans
Group 2B: Possibly carcinogenic to humans
Group 3: Unclassified as a carcinogen to humans
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG Code: International Maritime Dangerous Goods code
LFL/LEL: Lower Flammable Limit/Lower Explosive Limit
MSDS: Material Safety Data Sheet
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
N/A: Not Applicable
N/E: None Established
OEL: Occupational Exposure Limits
OSHA: Occupational Safety and Health Administration (U.S.)
PEL: Permissible Exposure Limit
PNOS: Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
RQ: Reportable Quantity
RTK: Right To Know
S or Skin: Skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route including mucous membranes and the eyes and by direct skin contact with the substance
SARA: Superfund Amendments and Reauthorization Act (U.S. EPA)
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
TDG: Canadian Transportation of Dangerous Goods Act and Regulations
TLV: Threshold Limit Value
TWA: Time Weighted Average (exposure for 8-hour workday)
UFL/UEL: Upper Flammable Limit/Upper Explosive Limit
UN: United Nations
U.S.: United States
WHMIS: Canadian Workplace Hazardous Materials Information System

Users responsibility/disclaimer of liability

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

Safety Data Sheet Preparer:
Product Compliance Department
Emerald Performance Materials, LLC
2020 Front Street, Suite 100
Cuyahoga Falls, Ohio 44221
United States

Univar USA Inc Material Safety Data Sheet

For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

Univar USA Inc. ("Univar") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process