SAFETY DATA SHEET

DynaPoxy™ Healer Sealer Part B

PART I  What is the material and what do I need to know in an emergency?

1. PRODUCT IDENTIFICATION

IDENTIFICATION of the SUBSTANCE or PREPARATION

<table>
<thead>
<tr>
<th>TRADE NAME (AS LABELED):</th>
<th>DynaPoxy™ Healer Sealer Part B</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DESCRIPTION:</td>
<td>Part A of Two-Part Epoxy Sealant</td>
</tr>
<tr>
<td>CHEMICAL NAME/CLASS:</td>
<td>Amine and Solvent Mixture</td>
</tr>
<tr>
<td>SYNONYMS:</td>
<td>None</td>
</tr>
<tr>
<td>RELEVANT USE:</td>
<td>Part B for Penetrating Epoxy Sealer</td>
</tr>
<tr>
<td>USES ADVISED AGAINST:</td>
<td>Other Than Relevant Use</td>
</tr>
</tbody>
</table>

COMPANY/UNDERTAKING IDENTIFICATION:

<table>
<thead>
<tr>
<th>SUPPLIER/MANUFACTURER’S NAME:</th>
<th>Pecora Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESS:</td>
<td>165 Wambold Road, Harleysville, PA 19438</td>
</tr>
<tr>
<td>EMERGENCY PHONE:</td>
<td>800-424-9300 (CHEMTREC, 24-hours)</td>
</tr>
<tr>
<td>BUSINESS PHONE:</td>
<td>215-723-6051 (Mon–Fri, 8 AM–5 PM ET)</td>
</tr>
<tr>
<td>PREPARATION DATE:</td>
<td>October 2009</td>
</tr>
<tr>
<td>REVISION DATE:</td>
<td>January 26, 2015</td>
</tr>
</tbody>
</table>

This product is sold for commercial use. This MSDS has been developed to address safety concerns of those individuals working with bulk quantities of this material, as well as those of potential users of this product in industrial/occupational settings. ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, and Canadian WHMIS (Controlled Products Regulations) and the Global Harmonization Standard 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 LABELING AND CLASSIFICATION: This product has been classified per GHS Standards.

Classification:
- Flammable Liquid Cat. 3
- Carcinogenic Cat. 1B
- Germ Cell Mutagen Cat. 1B
- Aspiration Hazard Cat. 1
- Acute Inhalation Toxicity Cat. 4
- Acute Oral Toxicity Cat. 5
- Acute Dermal Toxicity Cat. 5
- STOT (Inhalation-Narcotic Effect) SE Cat. 3
- Skin Sensitization Cat. 1
- Aquatic Chronic Toxicity Cat. 2

Signal Word: Danger


Hazard Symbols/Pictograms: GHS02, GHS05, GHS07, GHS08, GHS09

EMERGENCY OVERVIEW:

Physical Description: This product is a clear, pale yellow liquid with a characteristic phenolic or amine odor.

Health Hazards: This product may cause severe respiratory, skin and eye irritation or burns. May cause systemic effects by skin contact, ingestion or inhalation. Inhalation, ingestion or skin contact may cause adverse central nervous system effects. Can cause skin and/or respiratory sensitization and allergic reaction in susceptible individuals. The Solvent Naphtha (Petroleum) Aromatic Light component is a suspect carcinogen and mutagen.

Flammability Hazard: This product is flammable and may ignite if exposed to temperature above 60°C (140°F) or direct flame. Vapors or fumes may travel to a distant ignition source and flashback.

Reactivity Hazard: This product is not reactive.

Environmental Hazard: This product is toxic to marine organisms with potential long-term effects. All release to the environment should be avoided.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMSI®)

<table>
<thead>
<tr>
<th>Health</th>
<th>3*</th>
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<tbody>
<tr>
<td>Flammability</td>
<td>2</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>0</td>
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</table>

See Section 16 for definitions of ratings

<table>
<thead>
<tr>
<th>0</th>
<th>Minimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Slight</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
</tr>
<tr>
<td>3</td>
<td>Serious</td>
</tr>
<tr>
<td>*</td>
<td>Chronic</td>
</tr>
</tbody>
</table>

HMSI® is a registered trademark of the National Paint and Coatings Association.

CANADIAN WHMIS CLASSIFICATION: B2, D2A, D2B and E. See Section 15 (Regulatory Information) for all classification details.

U.S. OSHA REGULATORY STATUS: This material has a classification under the Global Harmonization Standard, as applied under OSHA regulations, as given earlier in this Section.
3. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>W/W%</th>
<th>LABEL ELEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol, Branched</td>
<td>84852-15-3</td>
<td>25-50%</td>
<td>Classification: Reproductive Toxicity Cat. 2, Acute Oral Toxicity Cat. 4, Skin Corrosion Cat. 1B, Aquatic Acute Toxicity Cat. 1, Aquatic Chronic Toxicity Cat. 1, Hazard Statement Codes: H316, H314, H302, H314, H400, H410</td>
</tr>
<tr>
<td>Solvent Naphtha</td>
<td>64742-95-6</td>
<td>10-25%</td>
<td>Classification: Carcinogenic Cat. 1B, Germ Cell Mutagen Cat. 1B, Aspiration Hazard Cat. 1, Hazard Statement Codes: H350, H340, H304</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>10-25%</td>
<td>Classification: Flammable Liquid Cat. 3, Acute Inhalation Toxicity Cat. 4, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, Aquatic Chronic Toxicity Cat. 2, Hazard Statement Codes: H226, H312, H315, H319, H335, H411</td>
</tr>
<tr>
<td>3,6-Diazoctanethylene-diamine</td>
<td>112-24-3</td>
<td>≤ 5%</td>
<td>Classification: Acute Inhalation Toxicity Cat. 4, Skin Corrosion Cat. 1B, Acute Dermal Toxicity Cat. 5, Skin Sensitization Cat. 1, Respiratory Sensitization Cat. 1, Aquatic Chronic Toxicity Cat. 3, Hazard Statement Codes: H312, H314, H317, H334, H412</td>
</tr>
<tr>
<td>Mesitylene</td>
<td>108-67-8</td>
<td>≤ 5%</td>
<td>Classification: Flammable Liquid Cat. 3, STOT (Inhalation-Respiratory Irritation/Narcotic Effect) SE Cat. 3, Aquatic Chronic Toxicity Cat. 3, Hazard Statement Codes: H226, H335, H336, H411</td>
</tr>
<tr>
<td>2,4,6-Tris(dimethylaminomethy)phenol</td>
<td>90-72-2</td>
<td>≤ 5%</td>
<td>Classification: Acute Oral Toxicity Cat. 4, Eye Irritation Cat. 2A, Skin Irritation Cat. 2, Hazard Statement Codes: H302, H314, H315, H361fd, H302, H314, H400, H410</td>
</tr>
<tr>
<td>Cumene</td>
<td>98-82-8</td>
<td>≤ 1%</td>
<td>Classification: Flammable Liquid Cat. 3, Aspiration Hazard Cat. 1, STOT (Inhalation-Respiratory Irritation/Narcotic Effect) SE Cat. 3, Aquatic Chronic Cat. 3, Hazard Statement Codes: H226, H304, H335, H336, H411</td>
</tr>
</tbody>
</table>

See Section 16 for full text of Ingredient Hazard and Precautionary Statements

PART II  What should I do if a hazardous situation occurs?

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should not attempt to retrieve victims of exposure to this material without adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary. Fire protective gear may be necessary.

DESCRIPTION OF FIRST AID MEASURES: Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Remove and isolate contaminated clothing and shoes. Seek immediate medical attention. Take copy of label and MSDS to physician or other health professional with victim(s).

Inhalation: If mists, sprays or fumes of this material are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

Skin Exposure: If the material contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 20 minutes. Do not interrupt flushing. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention.

Eye Exposure: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 20 minutes. Do not interrupt flushing.

Ingestion: If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directly by medical personnel. Have victim rinse mouth with water or give several cupfuls of water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory and central nervous system conditions or skin problems may be aggravated by overexposure to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 60°C (140°F)  AUTOIGNITION: 450°C (842°F)
FLAMMABLE LIMITS IN AIR: LEL: 0.7%; UEL: 7.5%

EXTINGUISHING MEDIA:
- Suitable Extinguishing Media: Use materials appropriate for surrounding materials.
- Unsuitable Extinguishing Media: Do not use water jet; water used directly on burning product may cause frothing and spread fire.

PROTECTION OF FIREFIGHTERS:
- Special Hazards Arising From the Product: This product is flammable and can be ignited when exposed to temperature of its flash point or direct flame. Not sensitive to mechanical impact under normal conditions. Vapors may form explosive mixtures in air. Vapors are heavier than air and can accumulate in confined spaces creating a toxicity and explosion hazard. Vapors can travel long distances and flashback to ignition source. Can undergo hazardous polymerization when exposed to aliphatic amines, with considerable release of heat; closed containers may rupture violently when heated. Closed containers may develop pressure and rupture in event of fire.
- Special Protective Actions for Fire-Fighters: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. 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.
6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: An accidental release can result in a fire. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Eliminate any possible sources of ignition, and provide maximum explosion-proof ventilation. Use only non-sparking tools and equipment during the response. 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: Responders should wear the level of protection appropriate to the type of chemical released, the amount of the material spilled, and the location where the incident has occurred.

Small Spills: For releases of 1 drum or less, Level D Protective Equipment (gloves, chemical resistant apron, boots, and eye 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), chemical resistant suit, fire-retardant clothing and boots, hard hat, and Self-Contained Breathing Apparatus.

METHODS FOR CLEAN-UP AND CONTAINMENT:

All Spills: Access to the spill area should be restricted. Spread should be limited by gently covering the spill with polypads. Absorb spilled liquid with clay, sand, poly pads, or other suitable inert absorbent materials. All contaminated absorbents and other materials should be placed in an appropriate container and seal. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). Dispose of recovered material and report spill per regulatory requirements. Remove all residue before decontamination of spill area. Clean spill area with soap and copious amounts of water. Monitor area for combustible vapor levels and confirm levels are below exposure limits given in Section 8 (Exposure Controls – Personal Protection), if applicable, and that levels are below applicable LELs (see Section 5 – Fire Fighting Measures) before non-response personnel are allowed into the spill area. Purge equipment with inert gas prior to reuse.

ENVIRONMENTAL PRECAUTIONS: Minimize use of water to prevent environmental contamination. Prevent spill or rinsate from contaminating storm drains, sewers, soil or groundwater. Place all spill residues in a suitable container and seal. Do not discharge effluent containing this product into streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

OTHER INFORMATION: U.S. regulations may require reporting of spills of this material that reach surface waters if a sheen is formed. If necessary, the toll-free phone number for the US Coast Guard National Response Center is 1-800-424-8802.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

PART III How can I prevent hazardous situations from occurring?

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not taste or swallow. Use only with adequate ventilation. Contaminated clothing needs to be laundered prior to reuse. Keep away from heat and flame. In the event of a spill, follow practices indicated in Section 6: ACCIDENTAL RELEASE MEASURES. Empty containers may contain residual product; therefore, empty containers should be handled with care. Keeping work areas clean is essential. Use work surfaces that can be easily decontaminated. Maintain good personal hygiene.

CONDITIONS FOR SAFE STORAGE: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Containers should be 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. Local Fire Departments should be notified of the storage of this product on site. Storage and processing areas of this product should be identified with a NFPA 704 placard (diamond) large enough to be seen from a distance. Post warning and “NO SMOKING” signs in storage and use areas, as appropriate. Refer to NFPA 30, Flammable and Combustible Liquids Code, for additional information on storage. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. The recommended storage life is 12 months at 15-32°C (40-90°F).

PRODUCT USE: This product is Part A of a two part resin system. Follow all industry standards for use of this product.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate, explosion proof ventilation to ensure exposure levels are maintained below the limits provided in this section.
8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Occupational/Workplace Exposure Limits/Guidelines:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Guideline</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumene</td>
<td>98-82-8</td>
<td>ACGIH TEL TWA</td>
<td>50 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>50 ppm (skin) ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>50 ppm (skin) ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>10 (skin) ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK PEAK</td>
<td>4*MAK 15 minute average value, 1-hr interval 4 per shift (danger of photo-contact sensitization)</td>
</tr>
<tr>
<td>3,6-Diazooxanthenediamine</td>
<td>112-24-4</td>
<td>DFG MAK TWA</td>
<td>50 (inhalable fraction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AIHA WEELS TWA</td>
<td>1 ppm (skin)</td>
</tr>
<tr>
<td>Mesitylene</td>
<td>108-67-8</td>
<td>OSHA PEL TWA</td>
<td>Vacated 1989 PEL: 25 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>25 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>20 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK PEAK</td>
<td>4*MAK 15 minute average value, 1-hr interval 4 per shift</td>
</tr>
<tr>
<td>4-Nonylphenol Branched</td>
<td>84852-15-3</td>
<td>NE</td>
<td>NE</td>
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<tr>
<td>Solvent Naphtha (Petroleum) Light Aromatic</td>
<td>64742-95-6</td>
<td>NE</td>
<td>NE</td>
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<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>ACGIH TEL TWA</td>
<td>25 ppm (mixed isomers)</td>
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<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>25 ppm (vacated 1989 PEL)</td>
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<td></td>
<td>NIOSH REL TWA</td>
<td>25 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>20 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK PEAK</td>
<td>4*MAK 15 minute average value, 1-hr interval 4 per shift</td>
</tr>
<tr>
<td>2,4,6-Tris(dimethylaminomethyl) phenol</td>
<td>90-72-2</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

NE = Not Established. See Section 16 for Definitions of Terms Used.


Eye/Face Protection: Use approved safety goggles or safety glasses. If necessary, refer to appropriate regulations.

Skin Protection: Wear chemical impervious gloves (e.g., Nitrile or Neoprene). Use triple gloves for spill response. If necessary, refer to appropriate regulations.

Body Protection: Use body protection appropriate for task (e.g., lab coat, coveralls, Tyvek suit). If necessary, refer to the OSHA Technical Manual (Section VII: Personal Protective Equipment) or appropriate Standards of Canada. 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 appropriate regulations.

Respiratory Protection: If mists or sprays from this product are created during use, use appropriate respiratory protection. If necessary, use only respiratory protection authorized in appropriate regulations. Oxygen levels below 19.5% are considered IDLH by 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 appropriate regulations. The following NIOSH respiratory equipment guidelines for components that present an inhalation hazard are presented for additional assistance in respiratory protective equipment selection.

NAPHTHAS

CONCENTRATION RESPIRATORY PROTECTION
Up to 1000 mg/m³: Any Chemical Cartridge Respirator with organic vapor cartridge(s), or any Supplied-Air Respirator (SAR), or any SAR operated in a continuous-flow mode, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s).
Up to 5000 mg/m³: Any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any PAPR with a tight-fitting facepiece and organic vapor cartridge(s), or any Self-Contained Breathing Apparatus with a full facepiece, or any SAR.

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 (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Somewhat viscous liquid.
MOLECULAR WEIGHT: Mixture.
ODOR: Sweet, solvent.
ODOR THRESHOLD: Cumene: 0.008 ppm to 0.047 ppm; Mesitylene: Recognition 0.4 mg/m³ (2 ppm); Solvent Naphtha (Petroleum) Light Aromatic: ~ 0.07 ppm (~ 0.4 mg/m³); 1,2,4-Trimethylbenzene: 0.2-0.7 mg/m³
VAPOR DENSITY: (air = 1) > 1
FREEZING/MELTING POINT: Not available.
SPECIFIC GRAVITY (water = 1) @ 20°C: Not determined.
FLASH POINT: 60°C (140°F)
LOWER EXPLOSION LIMIT (LEL): 0.7%
SOLUBILITY IN WATER: Not miscible.
VAPOR PRESSURE @ 20°C: 5.0 hPa (4 mmHg)
COLOR: Clear.
MOLECULAR FORMULA: Mixture.
PH: Not available.
BOILING POINT: 153°C (307°F)
VISCOITY: Not available.
PERCENT ORGANIC SOLVENTS: 25%
AUTOIGNITION TEMPERATURE: 450°C (842°F)
UPPER EXPLOSION LIMIT (UEL): 7.5%
EVAPORATION RATE (nBuAc = 1): > 1
COEFFICIENT WATER/OIL DISTRIBUTION: Not available.
9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES): The odor may be a good characteristic to identify this product in the event of an accidental release.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under normal circumstances of use and handling.

CONDITIONS TO AVOID: Avoid contact with incompatible chemicals and exposure to extreme temperatures.

INCOMPATIBLE MATERIALS: Based upon component incompatibility, this product may be incompatible with acids, acid chlorides, acid anhydrides, aldehydes, ketones, halogenated organic, acrylates, nitromethane, chlorofluoromethanes, calcium hypochlorites, sodium nitrating agents (e.g. nitrates and nitric acid) and oxidizers. This product may attack some plastics and may attack copper and copper alloys.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion: Thermal decomposition of this product can generate carbon and nitrogen oxides, formaldehyde, reactive hydrocarbons, low molecular weight aldehydes, hydrogen cyanide, ammonia, volatile amines, and ketones. Hydrolysis: None known.

POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: This product is not reactive.

PART IV Is there any other useful information about this material?

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS: The most significant routes of occupational overexposure are inhalation and contact with skin and eyes. The symptoms of overexposure to this product are as follows:

Contact With Skin or Eyes: This product is corrosive; direct skin or eye contact can cause severe irritation or burns, depending on concentration and duration of exposure. Burns may not be immediately visible or painful. Direct eye contact may cause blindness. Eye contact with vapors is irritating and can cause a disturbance of vision known as ‘halo eyes’. This is a visual disturbance of a blue halo or ring seen when looking into light. This disturbance normally disappears after several hours when exposure has ended. Skin contact may result in sensitization and allergic reaction.

Skin Absorption: Prolonged skin contact may cause adverse systemic toxicity by skin absorption as described under ingestion or inhalation.

Ingestion: Corrosive by ingestion. May be harmful or fatal swallowed. If the product is swallowed, it may cause severe irritation of the mouth, throat, and other tissues of the gastro-intestinal system and may cause nausea, vomiting, and diarrhea as well as adverse effects on the central nervous system. Aspiration into the lungs after ingestion can cause a serious hazard of chemical and pulmonary edema.

Inhalation: This product may cause severe irritation or burns by inhalation. Symptoms of overexposure may include coughing, sneezing, and difficulty breathing. Inhalation of high concentrations of this product (as may occur in a poorly ventilated area) may be fatal. Inhalation can also lead to adverse central nervous system effects, including dizziness, incoordination, nausea and vomiting. High aerosol concentrations could cause inflammation of the lungs (chemical pneumonitis), chemical bronchitis with severe asthma-like wheezing, severe coughing spasms and accumulation of fluid in the lungs (pulmonary edema), which could prove fatal. Several hours after pulmonary edema may not appear until several hours after exposure and are aggravated by physical exertion.

Injection: Accidental injection of this product (e.g. puncture with a contaminated object) may cause burning, redness, swelling or burns in addition to the wound.

Other Health Effects: Long-term, high level exposure to organic solvents has been associated with a condition called "organic solvent syndrome". Symptoms such as excessive fatigue, reduced memory, pain and numbness in the legs, arms, hands and feet and behavioral changes have been observed in some people with long-term, high-level occupational exposure to organic solvents.

TARGET ORGANS: Acute: Skin, eyes, respiratory system, central nervous system. Chronic: Skin, respiratory and central nervous systems.

TOXICITY DATA: There are currently no toxicity data available for this product; the following toxicology data are available for components greater than 1% in concentration. Due to the large amount of data for components, only human data, LD50 Oral-Rat or Mouse, LD50 Skin-Rat or Mouse, LC50 Inhalation-Rat or Mouse, skin and eye irritation and mutation data for components are provided in this SDS. Contact Pecora for more information.

3.6-DIAZOCANTHANYLENEDIAMINE:
Open Irritation Test (Skin-Rabbit) 490 mg: Severe
Standard Draize Test (Skin-Rabbit) 5 mg/24 hours: Severe
Standard Draize Test (Eye-Rabbit) 49 mg: Severe
Standard Draize Test (Eye-Rabbit) 20 mg/24 hours: Moderate
LD50 (Oral-Rat) 2500 mg/kg
LD50 (Oral-Rat) 38.5 mg/kg
LD50 (Oral-Rat) 5500 mg/kg
LD50 (Skin-Rabbit) 805 mg/kg
Mutation in Microorganisms (Escherichia coli ATCC 25922) 5000 ppm/plate
Mutation in Microorganisms (Salmonella typhimurium TA100) 100 µg/ml
Uncalculated DNA Synthesis (Rat Liver) 10 µG/L
Sister Chromatid Exchange (Hamster-Ovary) 1 mg/L
MESITYLENE:
TCIlo (Inhalation-Human) 10 ppm: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Behavioral: somnolence (general depressed activity), Langs, Thorax, or Respirion: structural or functional change in trachea or bronchi
Standard Draize Test (Skin-Rabbit) 20 mg/24 hours: Moderate
Standard Draize Test (Eye-Rabbit) 500 mg/24 hours: Mild
LC50 (Inhalation-Rat) 24000 mg/ml/4 hours
LD50 (Oral-Mouse) 7000 mg/kg
Sister Chromatid Exchange (Intraperitoneal-Mouse) 18000 mg/kg
4-NONYLPHENOL BRANCHED MIXED ISOMERS:
Standard Draize Test (Skin-Rabbit) 500 mg/24 hours: Severe
Standard Draize Test (Eye-Rabbit) 100 mg: Severe
LD50 (Oral-Rat) 1300 mg/kg: Liver: other changes; Blood: hemorhage Nutritional and Gross Metabolic: weight loss or decreased weight gain
4-NONYLPHENOL BRANCHED MIXED ISOMERS (continued):
LD50 (Oral-Rat) 1882 mg/kg
SOVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC:
Standard Draize Test (Eye-Rabbit) 100 µL/24 hours: Mild
LD50 (Oral-Rat) 8400 mg/kg: Behavioral: somnolence (general depressed activity), tremor;
LD50 (Oral-Rat) 1280 mg/kg: Behavioral: somnolence (general depressed activity), tremor;
LD50 (Oral-Rat) 6900 mg/kg: Behavioral: somnolence (general depressed activity), tremor;
LD50 (Oral-Rat) 1752 mg/kg: Behavioral: somnolence (general depressed activity), tremor;
LD50 (Oral-Rat) 900 mg/kg: Behavioral: somnolence (general depressed activity), tremor;
TRIS-2,4,6-(DIMETHYLANIMINOMETHYL) PHENOL:
Standard Draize Test (Skin-Rabbit) 2 mg/24 hours: Severe
Standard Draize Test (Skin-Rabbit) 500 µL/24H hours: Severe
Standard Draize Test (Skin-Rabbit) 0.025 mL: Mild
Standard Draize Test (Skin-Rabbit) 0.25 mL: Severe
LD50 (Oral-Rat) 1200 mg/kg: Peripheral Nerve and Sensation: flaccid paralysis without anesthesia (usually neuromuscular blockade); Langs, Thorax, or Respirion: dyspnea LD50 (Oral-Rat) 1673 mg/kg: Behavioral: tremor; Gastrointestinal: ulceration or bleeding from stomach, Liver: other changes
LD50 (Skin-Rabbit) 1280 mg/kg
11. TOXICOLOGICAL INFORMATION (Continued)

CARCINOGENIC POTENTIAL OF COMPONENTS: The following table summarizes the carcinogenicity listing for the components of this product. “NO” indicates that the substance is not considered to be or suspected to be a carcinogen by the listed agency.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>IARC</th>
<th>EPA</th>
<th>NTP</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>PROP 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumene</td>
<td>2B</td>
<td>CBD, D</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3,6-Diazoctanethylenediamine</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Mesitylene</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4-Nonylphenol Branched</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Solvent Naphtha (Petroleum) Light Aromatic</td>
<td>2B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2,4,6-Tris(dimethylaminomethyl) phenol</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

IARC-2B: Possibly Carcinogenic to Humans. EPA-CBD: Cannot Be Determined. EPA-D: Not Classifiable as to Human Carcinogenicity.

IRRITANT OF PRODUCT: This product is irritating by all routes of exposure.

SENSITIZATION TO THE PRODUCT: This product may cause skin sensitivity and allergic reaction in susceptible individuals. Symptoms can include itching, redness, swelling, welts and rash. A sensitized person who contacts even a small amount of material can develop severe dermatitis with symptoms such as skin redness, itching, rashes and swelling. This product may also cause respiratory sensitization due to the amine components. Symptoms may include Symptoms can resemble a cold, flu, mild hay fever or asthma. Effects commonly include difficulty in breathing, chest tightness, wheezing, coughing, sneezing, and runny or blocked nose. Other symptoms such as headache, watery eyes and general feelings of bodily discomfort may also appear. Once sensitized, exposure to very small concentration can trigger allergic reaction.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: The toxic effects of Mesitylene can probably be increased by the consumption of alcohol. No specific human information is available, but alcohol increases the toxicity of related chemicals, such as xylene and toluene. 2,4,6-Tris(dimethylaminomethyl) Phenol contains 2 secondary amine groups which can react with nitrosating agents (e.g. nitrates) to form nitrosamines that may be carcinogenic.

REPRODUCTIVE TOXICITY INFORMATION: This product has not been tested for reproductive toxicity. The following information is for some components.

Mutagenicity: Solvent Naphtha Petroleum Light Aromatic: Negative results were obtained in 2 studies using live rats. Positive and negative results were obtained in cultured mammalian cells and in bacteria.

Embryotoxicity/Teratogenicity: Solvent Naphtha Petroleum Light Aromatic: Harmful effects have been observed in the offspring of rats and mice exposed by inhalation, and in rats exposed by ingestion, but only in the presence of maternal toxicity. Mice were exposed by inhalation to 0, 100, 500 or 1500 ppm light aromatic solvent naphtha on days 6-15 of pregnancy. Exposure to 100 ppm produced a significant decrease in the number of live fetuses/litter. However, this effect was not dose-related, as it did not occur at the 500 ppm exposure. No significant maternal toxicity was noted at 100 ppm. At 500 ppm, a significant reduction in fetal body weight was observed in the presence of maternal toxicity (reduced weight gain). At 1500 ppm, teratogenicity, embryotoxicity and fetotoxicity were observed in the presence of severe maternal toxicity (44% mortality and clinical observations). Rats were continuously exposed to approximately 120, 200 or 400 ppm (cited as 600, 1000 or 2000 mg/m³) on days 7-15 of pregnancy. A significant increase in fetal skeletal retardation was observed at all exposures. Fetal weight was retarded at 200 or 400 ppm and overall malformations were increased at 400 ppm. Toxic effects in the mothers were described as slight and dose-dependent. The authors of this paper and authors of a subsequent review indicate that no significant effects were observed in rat offspring at the low dose. Rats were exposed to 0, 120, 200 or 400 ppm (cited as 600, 1000 or 2000 mg/m³) during days 7-15 of pregnancy with subsequent behavioral evaluation of the pups. No effects were observed in the behavioral parameters evaluated, birth weight, postnatal weight gain or survival or nervous system development. (12) Mice exposed continuously to approximately 100 ppm (500 mg/ml) on days 6-15 of pregnancy showed embryotoxicity (post-implantation loss) and an increase in overall malformations. There was no evaluation of maternal toxicity.

3,6-Diazoctanethylenediamino: Some evidence of teratogenicity and fetotoxicity in animals at doses harmful to the mother.

BIOLICAL EXPOSURES INDICES (BEIs): Currently, no BEI’s have been established for components.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil. The following information is available for the some components.

MESTYLENE: An experimental Koc value of 660 was measured for Mesitylene in soil (0.15% organic carbon. According to a recommended classification scheme, this measured Koc value suggests that Mesitylene has low mobility in soil. Mesitylene was measured in soil leachate samples following the addition of crude oil to the surface of a soil trough filled with sand.

1,2,4-TRIMETHYLBENZENE: A sorption constant of 0.31 ml/g was measured in a Eustis soil (fine sand, organic carbon= 0.39%). Using a structure estimation method based on molecular connectivity indices, the Koc for 1,2,4-Trimethylbenzene can be estimated to be about 720. According to a recommended classification scheme, this estimated Koc value suggests that 1,2,4-Trimethylbenzene has low mobility in soil. 1,2,4-Trimethylbenzene was measured in soil leachate samples following the addition of crude oil to the surface of a soil trough filled with sand. Soil columns were constructed with saturated zone material contaminated with 1,2,4-Trimethylbenzene; over 160 pore volumes were required for complete removal of this compound indicating some adsorption to the aquifer material was occurring. This adsorption may have been due to interactions with other hydrocarbons also present on this aquifer material.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The following information is available for some components.

MESTYLENE: If released to the atmosphere, Mesitylene will exist solely in the vapor phase in the ambient atmosphere, based on a measured vapor pressure of 2.48 mm Hg at 25 deg C. Vapor-phase Mesitylene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and nitrate radicals with half-lives of about 7 hours and 10-67 days, respectively. A measured Koc value of 660 suggests that Mesitylene will have low mobility in soil. Volatilization from moist and dry soil surfaces should occur based on a measured Henry's Law constant of 8.77X10³ atm·cm³/mole and the vapor pressure of this compound, respectively. Mesitylene should aerobically biodegrade in both soil and water. Mesitylene was not degraded in methanogenic aquifer microcosms. In water, Mesitylene may adsorb to sediment or particulate matter based on its Koc value. This compound should volatilize from water surfaces given its Henry's Law constant. Estimated half-lives for a model river and model lake are 3 hours and 4 days, respectively. Bioconcentration in aquatic organisms may occur based on BCF values of 31-275, measured in carp. 1,2,4-Trimethylbenzene is expected to photodegrade in natural waters.
12. ECOLOGICAL INFORMATION (Continued)

**BIO-ACCUMULATION POTENTIAL:** This product has not been tested for bio-accumulation potential. The following information is available for some components.

*Mesitylene: BCF values of 23-342 and 42-328 were measured in carp for Mesitylene concentrations of 150 and 15 µg/L respectively. According to a classification scheme, these BCF values suggest that bioconcentration in aquatic organisms may occur.*

1,2,4-Trimethylbenzene: CF values of 33-275 and 31-207 were measured in carp for 1,2,4-Trimethylbenzene concentrations of 0.2 and 0.02 mg/L, respectively. A BCF value of 132 was measured in fish. Accordingly to a classification scheme, these BCF values suggest that bioconcentration in aquatic organisms ranges from moderate to high. 1,2,4-Trimethylbenzene is classified as moderately accumulative in carp.

**ECOTOXICITY:** This product has not been tested for aquatic or animal toxicity. All release to terrestrial, atmospheric and aquatic environments should be avoided. The following aquatic toxicity data are available for some components. Only select data are given due to the large amount of data available. Contact Acteco for more information.

**CUMENE:**
- **LC50 (Daphnia magna) 0.6 ppm/48 hr /Conditions of bioassay not specified**
- **LC50 (Pimephales promelas fathead minnow) 96 hours = 6.32 mg/L**

**MESITYLENE:**
- **EC50 (Daphnia magna) 24 hours = 50 mg/L**
- **EC50 (Scenedesmus subspicatus Green algae, Log growth phase) 48 hours = 25,000-53,000 µg/L**
- **EC50 (Daphnia magna Water flea, age 4-6 days, length 1.5 mm) 48 hours = 50 mmol/m²**
- **LC50 (Artemia salina Brine shrimp, nauplii) 24 hours = 118 mmol/m²**

**OTHER ADVERSE EFFECTS:** This material is not expected to have any 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

**PREPARING WASTES FOR DISPOSAL:** As supplied, this product would not be a hazardous waste as defined by U.S. federal regulation (40 CFR 261) if discarded or disposed. State and local regulations may differ from federal regulations. The generator of the waste is responsible for proper waste determination and management.

**U.S. EPA WASTE NUMBER:** Wastes of this product should be tested to see if they meet the criteria of D001 (Ignitability characteristic).

14. TRANSPORTATION INFORMATION

**U.S. DEPARTMENT OF TRANSPORTATION:** This product is classified as Dangerous Goods, per U.S. DOT regulations, under 49 CFR 172.101.

**UN Identification Number:** UN 2924

**Proper Shipping Name:** Flammable liquid, corrosive n.o.s. (4-Nonylphenol, Branched)

**Hazard Class Number and Description:** 3 (Flammable), 8 (Corrosive)

**Packing Group:** PG III

**Hazmat Label(s) Required:** Class 3 (Flammable), Class 8 (Corrosive)

**North American Emergency Response Guidebook Number (2012):** 132

**Marine Pollutant:** This product meets the criteria of a Marine Pollutant (as defined by 49 CFR 172.101).

**TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:** This product is classified as Dangerous Goods, per regulations of Transport Canada.

**UN Identification Number:** UN 2924

**Proper Shipping Name:** Flammable liquid, corrosive n.o.s. (4-Nonylphenol, Branched)

**Hazard Class Number and Description:** 3 (Flammable), 8 (Corrosive)

**Packing Group:** PG III

**Hazardful Material Label(s) Required:** Class 3 (Flammable), Class 8 (Corrosive)

**Special Provisions:**
- **Explosive Limit & Limited Quantity Index:** 5
- **ERAP Index:** None
- **Passenger Carrying Ship Index:** None
- **Passenger Carrying Road or Rail Vehicle Index:** 5

**INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA):** This product is classified as dangerous goods, per the International Air Transport Association.

**UN Identification Number:** UN 2924

**Proper Shipping Name:** Flammable liquid, corrosive n.o.s. (4-Nonylphenol, Branched)

**Hazard Class Number and Description:** 3 (Flammable), 8 (Corrosive)

**Packing Group:** PG III

**Hazardous Material Label(s) Required:** Class 3 (Flammable), Class 8 (Corrosive)

**Exceptional Quantities:** 1 L

**Passenger & Cargo Aircraft Packing Instruction:** 354

**Passenger & Cargo Aircraft Maximum Net Quantity per Pkg.:** 5 L

**Passenger & Cargo Aircraft Limited Quantity Packing Instruction:** Y342

**Cargo Aircraft Only Packing Instruction:** 365

**Cargo Aircraft Only Maximum Net Quantity per Pkg.:** 60 L

**Special Provisions:** A3, a803

**Special Code:** 3C
14. TRANSPORTATION INFORMATION (Continued)

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is classified as dangerous goods, per the International Maritime Organization.

UN No.: 2924
Proper Shipping Name: Flammable liquid, corrosive n.o.s. (4-Nonylphenol, Branched)
Hazard Class Number: 3 (Flammable), 8 (Corrosive)
Packing Group: III
Labels: Class 3 (Flammable), Class 8 (Corrosive)
Special Provisions: 223, 274
Limited Quantities: 5 L
Excepted Quantities: E1
Packing: Instructions: P001; Provisions: None
IBC's: Instructions: IBC03; Provisions: None
Tanks: Instructions: T7; Provisions: TP1, TP28
EmS: F-E, S-E
Stowage Category: Category A. Clear of living quarters.

15. REGULATORY INFORMATION

U.S. REGULATIONS:

U.S. SARA Reporting Requirements: The following 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.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>SECTION 302 EHS (TP0) (40 CFR 355, Appendix A)</th>
<th>SECTION 304 RQ (40 CFR Table 302.4)</th>
<th>SECTION 313 TRI (threshold) (40 CFR 372.65)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumene</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: Yes; REACTIVE: No; SUDDEN RELEASE: No

U.S. TSCA Inventory Status: All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

U.S. CERCLA Reportable Quantity (RQ): Cumene: 5000 lb (2270 kg)

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

U.S. Clean Water Act Requirements: Not applicable.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Cumene 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: The components of this product are on the DSL Inventory.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components have requirements under CEPA as follows:

Cumene and 1,2,4-Trimethylbenzene: Substances with Greatest Potential for Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meet categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are 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 Regulations: This product is classified as a Controlled Product, Hazard Classes B2 (Flammable Liquid); D2A (Poisonous and Infectious Material, Other Effects, Very Toxic, Central Nervous System Effects), a D2B (Poisonous and Infectious Material, Other effects-Toxic: Eye Irritation, Skin Irritation, Skin Sensitization) and E (Corrosive) as per the Controlled Product Regulations.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STSPS-2000): This product is classified as hazardous.

16. OTHER INFORMATION

U.S. ANSI STANDARD LABELING (Precautionary Statements): DANGER! FLAMMABLE, CORROSIVE LIQUID AND VAPOR. CAN CAUSE SEVERE IRRITATION OR BURNS BY ALL ROUTES OF EXPOSURE. MAY BE HARMFUL IF INGESTED, INHALED OR BY SKIN CONTACT. CONTAINS COMPOUND THAT IS SUSPECT CARCINOGEN AND MUTAGEN. CAN CAUSE SKIN SENSITIZATION. CAN CAUSE LONG-TERM HARM TO AQUATIC ORGANISMS. Avoid contact with eyes, skin, and clothing. Avoid breathing mist, vapors or fume. Do not taste or swallow. Wash thoroughly after handling. Keep container tightly closed. Use only with adequate ventilation. Keep away from heat and flame. Wear gloves, eye protection, respiratory protection, and appropriate body protection. FIRST-AID: In case of contact, immediately flush skin and eyes with plenty of water. Remove 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: Absorb spilled product with polypads or other suitable absorbing material. Place all spill residue in an appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada.
GLOBAL HARMONIZATION SYSTEM CLASSIFICATION:

Classification: Flammable Liquid Category 3, Carcinogenic Category 1B, Germ Cell Mutagen Category 1B, Skin Corrosion Cat. 1B, Aspiration Hazard Category 1, Acute Inhalation Toxicity Category 4, Acute Oral Toxicity Category 5, Acute Dermal Toxicity Category 5, Skin Irritation Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation/Narcotic Effect) Single Exposure Category 3, Skin Sensitization Category 1, Aquatic Chronic Toxicity Category 2

Signal Word: Danger


Precautionary Statements:


Response: P370 + P378: In case of fire: Use materials appropriate for surrounding fire for extinction. P308 + P313: IF exposed or concerned: Get medical advice/attention. P301 + P330 + P331: IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363: Wash contaminated clothing before reuse. P333 + P313: If skin irritation or rash occurs: 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. P321: Specific treatment (remove from exposure and treat symptoms). Refer to other portions of precautionary text on this label, SDS or other product information sheets, as appropriate. P391: Collect spillage.


Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS02, GHS05, GHS07, GHS08, GHS09

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Material Safety Data Sheet is presented in good faith and based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale.

All materials present hazards and should be used with caution. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices or applicable federal, state, or local laws or regulations. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

REVISION DETAILS: September 2012: Up-date and revise entire MSDS to include current GHS requirements; change in formulation. January 2015: Change of formulation and up-date of entire SDS.

DATE OF PRINTING: February 3, 2015

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, include the following:

KEY ACRONYMS:

CHEMTREC: Chemical Transportation Emergency Center, a 24-hour emergency information and/or emergency assistance to emergency responders.

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK: 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: I: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. II: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. III: Substances that have been shown to induce genetic damage in germ cells of humans or 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. IV: 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.

DFG MAK Pregnancy Risk Group Classification (continued): 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.

NIC: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH (NIOSH): 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 REL: 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 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is used when a there is a danger of cutaneous absorption.

SKIN: Used when there is a danger of cutaneous absorption.
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 hazard.

HEALTH HAZARD: 0 Minimal Hazard. No significant health risk, ignition of skin or eyes not anticipated. Skin Irritation: Essentially non-irritating. Mechanical irritation may occur. PL or Draize > 5 with no destruction of dermal tissue. Eye Irritation: Essentially non-irritating; reversible corneal opacification, brown staining, or irritation of eyes for 8-21 days. 

1 Slight Hazard. Minor irritation, but may be in evidence for longer than 8-21 days. Draize > 5 but with reversible effects. Oral LD50/Dar > 50-500 mg/kg. 

2 Moderate Hazard. Temporary or transitory injury may occur, prolonged exposure may affect the CNS. Skin Irritation: Moderately irritating; primary irritant; sensitizer. PL or Draize > 5, with no destruction of dermal tissue. Eye Irritation: Moderately to severely irritating; reversible corneal opacification. Mechanical irritation may occur. 

3 Severe Hazard. Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity: Smith Irritation: Severe irritation or corrosive; may destroy a moderate amount of dermal tissue, skin burns, and dermal necrosis. PL or Draize > 5 - 8, with destruction of tissue. Eye Irritation: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 8-21 days, or may be visible in 21 days. 

4 Extreme Hazard. Materials with an LD50/Dar > 5-10 mg/kg, Dermatological LD50/Dar > 20-100 mg/kg. Inhalation LD50 Inhalation LD4/4-hours: >0.05-0.5 mg/L. 

5 Extreme Hazard. Severe or fatal injury may occur from single exposure; extremely toxic; extremely flammable gases. Skin irritation 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 LD50/Dar > 1 mg/kg. 

Urgent Rating: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature and pressure conditions, to ignite or undergo combustion and emit combustion products. Materials that will burn in air when exposed to a temperature of 815°C (1500°F) for a period of 5 minutes. 

FLAMMABILITY HAZARD: 0 Minimal Hazard. Materials that will not burn in air when exposure to a temperature of 815°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 and pressure conditions, to ignite or undergo combustion and emit combustion products. Materials that will burn in air when exposed to a temperature of 815°C (1500°F) for a period of 5 minutes or less. 2 Moderate Hazard. Solids and semisolids having a flash point at or above 93°C (200°F) (i.e. OSHA Class IV or higher) or equivalent flammable liquid. 3 Severe 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 with air—under emergency conditions, would offer no hazard beyond that of the hazardous atmosphere produced by the material itself. 

Inhalation Toxicity LC50: 0 > 10,000 ppm. 1 LC50: > 1000 mg/kg but less than or equal to 2000 mg/kg. 2 LC50: > 500 mg/kg but less than or equal to 1000 mg/kg. 3 LC50: > 200 mg/kg but less than or equal to 500 mg/kg. 4 LC50: > 50 mg/kg but less than or equal to 200 mg/kg. 5 LC50: > 0 mg/kg but less than or equal to 50 mg/kg. 

OXYGENIC MATERIALS: Materials that are readily capable of detonation, or that do not have a mass explosivity of more than 2,000 kg/m3 or 0.5 mg/L. 

Reactive Materials: Materials that may polymerize, decompose, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. 

5 Extreme Hazard. Materials that will burn under typical fire conditions, including exposure to air or oxygen, at temperatures and pressures. Materials with an LC50 for acute inhalation toxicity greater than 200 mg/L. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials with an LD50 for acute dermal toxicity greater than 200 mg/kg. Materials with a LC50 for acute inhalation toxicity greater than 200 mg/L. 

Materials with an LD50 for acute dermal toxicity greater than 200 mg/kg. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials essentially non-irritating to the eyes but may still cause some respiratory irritation. Materials that have a mass explosivity of more than 3,000 kg/m3 or 0.5 mg/L. 

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS: 

HAZARD HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of the material itself. Gases and vapors with an LC50 for acute inhalation toxicity greater than 200 mg/L. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials essentially non-irritating to the eyes but may still cause some respiratory irritation. Materials that have a mass explosivity of more than 3,000 kg/m3 or 0.5 mg/L. 

FLAMMABILITY HAZARD: 0 Minimal Hazard. Materials that will not burn in air when exposed to a temperature of 815°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 and pressure conditions, to ignite or undergo combustion and emit combustion products. Materials that will burn in air when exposed to a temperature of 815°C (1500°F) for a period of 5 minutes or less. 2 Moderate Hazard. Solids and semisolids having a flash point at or above 93°C (200°F) (i.e. OSHA Class IV or higher) or equivalent flammable liquid. 3 Severe 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 with air—under emergency conditions, would offer no hazard beyond that of the hazardous atmosphere produced by the material itself. 

Inhalation Toxicity LC50: 0 > 10,000 ppm. 1 LC50: > 1000 mg/kg but less than or equal to 2000 mg/kg. 2 LC50: > 500 mg/kg but less than or equal to 1000 mg/kg. 3 LC50: > 200 mg/kg but less than or equal to 500 mg/kg. 4 LC50: > 50 mg/kg but less than or equal to 200 mg/kg. 5 LC50: > 0 mg/kg but less than or equal to 50 mg/kg. 

OXYGENIC MATERIALS: Materials that are readily capable of detonation, or that do not have a mass explosivity of more than 2,000 kg/m3 or 0.5 mg/L. 

Reactive Materials: Materials that may polymerize, decompose, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. 

5 Extreme Hazard. Materials that will burn under typical fire conditions, including exposure to air or oxygen, at temperatures and pressures. Materials with an LC50 for acute inhalation toxicity greater than 200 mg/L. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials essentially non-irritating to the eyes but may still cause some respiratory irritation. Materials that have a mass explosivity of more than 3,000 kg/m3 or 0.5 mg/L. 

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS: 

HAZARD HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of the material itself. Gases and vapors with an LC50 for acute inhalation toxicity greater than 200 mg/L. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials essentially non-irritating to the eyes but may still cause some respiratory irritation. Materials that have a mass explosivity of more than 3,000 kg/m3 or 0.5 mg/L. 

FLAMMABILITY HAZARD: 0 Minimal Hazard. Materials that will not burn in air when exposed to a temperature of 815°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 and pressure conditions, to ignite or undergo combustion and emit combustion products. Materials that will burn in air when exposed to a temperature of 815°C (1500°F) for a period of 5 minutes or less. 2 Moderate Hazard. Solids and semisolids having a flash point at or above 93°C (200°F) (i.e. OSHA Class IV or higher) or equivalent flammable liquid. 3 Severe 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 with air—under emergency conditions, would offer no hazard beyond that of the hazardous atmosphere produced by the material itself. 

Inhalation Toxicity LC50: 0 > 10,000 ppm. 1 LC50: > 1000 mg/kg but less than or equal to 2000 mg/kg. 2 LC50: > 500 mg/kg but less than or equal to 1000 mg/kg. 3 LC50: > 200 mg/kg but less than or equal to 500 mg/kg. 4 LC50: > 50 mg/kg but less than or equal to 200 mg/kg. 5 LC50: > 0 mg/kg but less than or equal to 50 mg/kg. 

OXYGENIC MATERIALS: Materials that are readily capable of detonation, or that do not have a mass explosivity of more than 2,000 kg/m3 or 0.5 mg/L. 

Reactive Materials: Materials that may polymerize, decompose, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. 

5 Extreme Hazard. Materials that will burn under typical fire conditions, including exposure to air or oxygen, at temperatures and pressures. Materials with an LC50 for acute inhalation toxicity greater than 200 mg/L. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials essentially non-irritating to the eyes but may still cause some respiratory irritation. Materials that have a mass explosivity of more than 3,000 kg/m3 or 0.5 mg/L. 

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS: 

HAZARD HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of the material itself. Gases and vapors with an LC50 for acute inhalation toxicity greater than 200 mg/L. Materials with an LD50 for acute oral toxicity greater than 200 mg/kg. Materials essentially non-irritating to the eyes but may still cause some respiratory irritation. Materials that have a mass explosivity of more than 3,000 kg/m3 or 0.5 mg/L.
DEFINITIONS OF TERMS (Continued):

FLAMMABILITY HAZARD (continued): 1 (continued): 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 73.8°C (100°F) and below 93.4°C (200°F) (i.e. Class B and Class IIIA liquids). 3 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). 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 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. 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% 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 not exceeding 93.4°C (200°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 being ignited by a spark, flame or explosion, 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. 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 at which a liquid, or a solid 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.

REPRODUCTIVE INFORMATION: A teratogen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxic is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

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 lethal threshold limit. log Kow or log Koc: Coefficient of Oil/Water Distribution is used to assess a substance’s behavior in the environment.

REGULATORY INFORMATION: This section explains the impact of various laws and regulations on the material. 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.


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. eq: Concentration expressed in parts of material per million parts of air or water. mg/mL: Concentration expressed in weight of substance per volume of air. ppm: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. TLC: Lowest dose to cause a symptom. TLD: Lowest concentration to cause a symptom. TD10, TD50, and TD100, or TC: TCLs and LCs: 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.