SAFETY DATA SHEET

DynaTred® Part A Activator

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>DynaTred® Part A Activator</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DESCRIPTION:</td>
<td>Part A Urethane</td>
</tr>
<tr>
<td>CHEMICAL NAME/CLASS:</td>
<td>Aromatic Isocyanate in Polyether Triol</td>
</tr>
<tr>
<td>SYNONYMS:</td>
<td>None</td>
</tr>
<tr>
<td>RELEVANT USE:</td>
<td>Non-Sag Traffic Grade Polyurethane Sealant</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>January 2004</td>
</tr>
<tr>
<td>REVISION DATE:</td>
<td>December 30, 2013</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: Carcinogenic Cat. 2, Acute Inhalation Toxicity Cat. 3, Eye Irritation Cat. 2, Flammable Liquid Cat. 3, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, Skin Irritation Cat. 2, Respiratory Sensitizer Cat. 1, Skin Sensitization Cat. 1, Aquatic Chronic Toxicity Cat. 3

Signal Word: Danger

Hazard Statement Codes: H351, H335, H262, H319, H335, H334, H317, H412


Hazard Symbols/Pictograms: GHS02, GHS06, GHS08

EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: This product is a clear, light yellow, flammable liquid with an odor characteristic of isocyanates.

HEALTH HAZARDS: DANGER! Inhalation of vapors may be harmful or fatal. Harmful or fatal if swallowed. This compound can cause irritation by all routes of exposure. Eye irritation may be severe. Chronic inhalation may cause lung damage. May cause toxic systemic effects by skin absorption. Can cause skin and respiratory sensitization and allergic reaction. Contain compounds that are suspect carcinogens.

FLAMMABILITY HAZARD: This product is flammable and can ignite if exposed to temperature at or above 40°C (140°F) or direct flame.

REACTIVITY HAZARD: Contact with water produces heat, carbon dioxide and urea polymers; reaction can be vigorous. Closed containers can rupture violently if contaminated with water or if involved in a fire. Due to the high level of the Polyether Triol component, this product may form unstable or flammable peroxides on prolonged exposure to air if stabilizer is depleted.

ENVIRONMENTAL HAZARD: This product has not been tested for environmental impact. All release to the environment should be avoided. Contains compounds that can cause harm to aquatic organisms.

Hazardous Materials Identification System (HMIS®)

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

See Section 16 for definitions of ratings:

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

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

Canadian WHMIS Classification: Class B2, Class D1A, Class D2A, Class D2B, 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.
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 cupsfuls 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 conditions, skin and respiratory allergies and asthma may be aggravated by overexposure to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate overexposure. Be observant for pulmonary edema. Copiously irrigate contaminated skin and eyes with saline. Non-cardiogenic pulmonary edema and bronchospasm are the most immediate serious clinical consequences of isocyanate exposure. Markedly symptomatic patients should receive oxygen, ventilatory support, and an intravenous line. Treatment for asthma includes inhaled sympathomimetics (salbutamol, metaproterenol), intravenous theophylline, parenteral sympathomimetics (epinephrine, terbutaline), and steroids.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 28.9°C (84°F)

AUTOIGNITION: Not available for product. For Polyether Triol: 202°C (390°F)

FLAMMABLE LIMITS IN AIR: Not known for product.

EXTINGUISHING MEDIA:

SUITABLE EXTINGUISHING MEDIA: Use materials appropriate for surrounding materials. Water should be used for cooling of containers only due to reaction with water.

UNSUITABLE EXTINGUISHING MEDIA: Water and halogenated media.

PROTECTION OF FIREFIGHTERS:

Special Hazards Arising From The Product: This is a combustible liquid which is also toxic by inhalation and skin contact and so presents a contact hazard to fire-fighters. This compound reacts with water to form urea polymers, heat and carbon dioxide. Products of thermal decomposition are highly toxic (refer to Section 10 Stability and Reactivity). This reaction can be vigorous. Not sensitive to mechanical impact under normal conditions. Closed containers may develop pressure and rupture in event of fire or if contaminated with water.

PROTECTION OF FIREFIGHTERS (continued):

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) should be worn.
- **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, polypads, 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 rinse 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.

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. Empty containers may contain residual product; therefore, empty containers should be handled with care.

PRODUCT USE: This product is used as a urethane activator. 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 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>Polyether Triol</td>
<td>25791-96-2</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Toluene-2,4-Disiocyanate</td>
<td>854-84-9</td>
<td>ACGIH TLV TWA</td>
<td>0.005 ppm (NIC: 0.001), Sensitizer</td>
</tr>
<tr>
<td></td>
<td>91-08-7</td>
<td>ACGIH TLV STEL</td>
<td>0.02 ppm (NIC: 0.003), Sensitizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL STEL</td>
<td>0.02 ppm (ceiling) [CAS# 584-84-9]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>Danger of Sensitization of the airways.</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>ACGIH TLV TWA</td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH TLV STEL</td>
<td>150 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL STEL</td>
<td>150 ppm (vacated 1989 PEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL STEL</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>100 (skin)</td>
</tr>
</tbody>
</table>

M195 MAK 15 minute average value, 1-hr interval 4 per shift

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

#### PERSONAL PROTECTIVE EQUIPMENT (PPE):


**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). Full-body chemical protection may be necessary. 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.

#### 2,4-TOLUENE DISOCYANATE

**CONCENTRATION RESPIRATORY PROTECTION**

Based on NIOSH REL at Concentrations Above the NIOSH REL, or Where There is No REL, at Any Detectable Concentration: Any Self-Contained Breathing Apparatus (SCBA) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any Supplied-Air Respirator (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

#### The following information is available for the product.

**FORM:** Liquid.

**MOLECULAR WEIGHT:** Mixture.

**ODOR:** Characteristic of isocyanates.

**SPECIFIC GRAVITY:** 1.05

**WATER SOLUBILITY:** Insoluble

**VOC (less water and exempt):** 104 g/L

**HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES):** The appearance and odor of this product may act as warning properties in the event of an accidental release.

The following information is available for the Polyether Triol component.

**MOLECULAR FORMULA:** C(3n+3)-(H(m+n)-(O(n)+3)

**ODOR:** Gasoline-like.

**VAPOR DENSITY:** Not available.

**BOILING POINT:** > 200°C (> 392°F)

**EXPANSION RATIO:** Not applicable.

**PH:** Not available.

**EVAPORATION RATE (nBuAc = 1):** Not available.

**SPECIFIC VOLUME (ft³/lb):** Not available.

**COEFFICIENT WATER/OIL DISTRIBUTION:** Not available.

The following information is available for the toluene disiocyanate components (as a mixture).

**MOLECULAR FORMULA:** Mixture

**ODOR:** Solvent-like.

**SPECIFIC GRAVITY @ 20°C (water = 1):** ~1.15

**VAPOR PRESSURE (air = 1):** > 1

**FREEZING/MELTING POINT:** Not available.

**OTHER SOLUBILITIES:** Not available.

**LOG COEFFICIENT WATER/OIL DISTRIBUTION:** Not available.
10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under normal circumstances of use and handling. May become unstable if stabilizer becomes depleted. At temperatures greater than 177°C (350°F), the Toluene Diisocyanate components in product can form carbodiimides with the release of carbon dioxide, which can cause pressure build up in closed containers.

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

INCOMPATIBLE MATERIALS: Based on components, this product may be incompatible with amines, water, strong bases, alcohols, copper alloys, zinc, tin and aluminum compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion: Thermal decomposition of this product can generate formaldehyde, carbon oxides, nitrogen oxides, hydrogen cyanide, mercury compounds, isocyanates and isocyanic acid. Hydrolysis: Carbon dioxide, heat and urea polymers.

POSSIBILITY OF HAZARDOUS REACTIONS: This product may undergo hazardous polymerization in contact with water or materials to which it is incompatible. The reaction may produce heat, carbon dioxide and urea polymers; reaction may be vigorous. Containers may rupture. Due to the high level of the Polyether Triol component, this product may form unstable or flammable peroxides on prolonged exposure to air if stabilizer is depleted.

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: Depending on the duration of skin contact, skin overexposures can cause reddening, discomfort and moderate to severe irritation. Prolonged or further contact can cause severe inflammation, redness, rash, swelling and blistering. Repeated skin exposure to low concentration can cause dermatitis. Skin contact can cause allergic reaction. Brief contact with the liquid or vapors from this product and the eyes can cause irritation, reddening and watering. Direct eye contact may cause severe eye irritation.

Skin Absorption: Prolonged skin contact may cause adverse systemic toxicity by skin absorption as described under ingestion or inhalation, as well as sensitization and allergic reaction to the skin.

Ingestion: If the product is swallowed, it can irritate the mouth, throat, and other tissues of the gastro-intestinal system or cause burns and may cause nausea, vomiting, and diarrhea. Symptoms can include dizziness, vomiting and incoordination. Ingestion of large amounts may be harmful and cause systemic toxicity. Aspiration into the lungs after ingestion can pose a serious hazard of chemical and pulmonary edema. Ingestion may be fatal.

Inhalation: Inhalation of vapors, mists, or sprays of this product can moderately to severely irritate the tissues of the nose, mouth, throat, and upper respiratory system. Symptoms of overexposure may include coughing, sneezing, and difficulty breathing. Severe overexposure via inhalation may result in a potentially fatal respiratory disorder (e.g., pulmonary edema, chemical pneumonitis); symptoms may be delayed by hours or even days. Inhalation of high concentrations of this product (as may occur in a poorly ventilated area) may be fatal. Repeated inhalation of mists of this product may cause respiratory disorders (e.g., bronchitis). Inhalation can also lead to adverse central nervous system effects, including dizziness, incoordination, nausea and vomiting. Chronic inhalation of low concentration may cause permanent damage to the lungs and reduced lung function. Effects such as euphoria, muscle incoordination and loss of consciousness have been reported after severe exposure to toluene diisocyanates. Inhalation can cause respiratory sensitization and allergic reaction as described further in this Section.

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

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin, respiratory system, neurological system.

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.

POLYETHER TRIOL:
Open Irritation Test (Skin Rabbit) 500 mg: Mild
LD₅₀ (Oral-Rat) > 64 mL/kg
LD₅₀ (Skin-Rabbit) > 20 mL/kg

TOLUENE 2,4-DIISOCYANATE:
Open Irritation Test (Skin Rabbit) 500 mg: Severe
Standard Draize Test (Skin-Rabbit) 500 mg/24 hour: Moderate
Standard Draize Test (Eye-Rabbit) 100 mg: Severe
TCLo (Inhalation-Woman) 300 ppb/8 hours/5 days: Lungs, Thorax, or Respiration: respiratory obstruction
TCLo (Inhalation-Human) 20 ppb/2 years: Lungs, Thorax, or Respiration: cough, sputum
TCLo (Inhalation-Human) 500 ppb: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Lungs, Thorax, or Respiration: other changes
TCLo (Inhalation-Human) 80 ppb: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Sense Organs and Special Senses (Eye): effect, not otherwise specified; Lungs, Thorax, or Respiration: other changes
LC₅₀ (Inhalation-Rat) 14 ppm/4 hours: Sense Organs and Special Senses (Eye): lacrimation; Behavioral: excitement; Lungs, Thorax, or Respiration: dyspnea
LC₅₀ (Inhalation-Rat) 14 ppm/4 hours: Lungs, Thorax, or Respiration: other changes
LC₅₀ (Inhalation-Mouse) 10 ppm/4 hours: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi; changes in pulmonary vascular resistance
LC₅₀ (Inhalation-Mouse) 10 ppm/4 hours: Lungs, Thorax, or Respiration: other changes
LC₅₀ (Inhalation-Rabbit) 11 ppm/4 hours: Behavioral: excitement; Lungs, Thorax, or Respiration: dyspnea; Gastrointestinal: changes in structure or function of salivary glands
LD₅₀ (Oral-Rat) 6.7 gm/kg
LD₅₀ (Oral-Rat) 5800 mg/kg: Gastrointestinal: other changes
LD₅₀ (Oral-Wild Bird Species) 100 mg/kg
LD₅₀ (Skin-Rabbit) > 16 mL/kg
LD₅₀ ( Intravenous-Mouse) 56 mg/kg
TCLo (Inhalation-Rat) 0.004 g/min/4 hours: Liver: hepatitis (hepato celular necrosis), zonal
TCLo (Inhalation-Rat) 204 µg/m³/24 hours/84 days-continuous: Behavioral: muscle contraction or spasticity; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase, Metabolism (Intermediate): lipids including transport
TCLo (Inhalation-Rat) 102 ppm/24 hours/7 days-continuous: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi
TCLo (Inhalation-Rat) 26 ppm/6 hours/5 weeks- intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi, chronic pulmonary edema; Related to

TOLUENE 2,4-DIISOCYANATE (continued):
Chronic Data: death
TCLo (Inhalation-Mouse) 990 ppm/6 hours/14 days- intermittent: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi; Related to Chronic Data: death
TCLo (Inhalation-Mouse) 1500 ppm/6 hours/79 days- intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi
TDLo (Oral-Rat) 15 mg/kg/10 days- intermittent: Gastrointestinal: other changes; Liver: other changes; Related to Chronic Data: death
TDLo (Skin-Mouse) 800 mg/kg/3 days- intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
TDLo (Skin-Mouse) 15 mg/kg/3 days- intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure); Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
TDLo (Skin-Mouse) 240 mg/kg/28 days- intermittent: Immunological Including Allergic: increase in humoral immune response
TDLo (Skin-Mouse) 0.03 mL/kg/3 days- intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)
TDLo (Skin-Mouse) 1.8 µL/kg/3 days- intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)
TDLo (Skin-Mouse) 18 µL/kg/17 days- intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure); Immunological Including Allergic: increased immune response
TDLo (Skin-Mouse) 1.7 mg/kg/17 days- intermittent: Immunological Including Allergic: increase in cellular immune response, increase in humoral immune response
TDLo (Skin-Mouse) 90 mg/kg/3 days- intermittent: Immunological Including Allergic: increase in humoral immune response; Biochemical: Metabolism (Intermediate): other proteins, effect on inflammation or mediation of inflammation
TDLo (Skin-Mouse) 4.8 mg/kg/8 days- intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
TDLo (Skin-Mouse) 1 ppm/3 days- intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediate): other proteins, effect on inflammation or mediation of inflammation
PERSISTENCE AND BIODEGRADABILITY
The following information is available for the toluene diisocyanate components.

TOXICITY DATA (continued)
TOLUENE 2,4-DIISOCYANATE (continued):
TDLo (Skin-Mouse) 90 mg/kg/3 days-intermittent: Skin and Appendages: dermatitis, allergic (after topical exposure); Biochemical: Metabolism (Intermediary): other proteins; effect on inflammation or mediation of inflammation
TDLo (Skin-Mouse) 7.2 mg/kg/6 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)
TDLo (Multiple Routes-Mouse) 0.3 ppb/3 days-intermittent: Lungs, Thorax, or Respiration: bronchial constriction; Lungs, Thorax, or Respiration: acute pulmonary edema, changes in lung weight
TDLo (Intradermal-Mouse) 500 mg/kg/3 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)
TDLo (Intratracheal-Rat) 48.84 µL/kg/21 days-intermittent: Immunological Including Allergic: other immediate (humoral): articular, allergic rhinitis, serum sickness; Biochemical: Metabolism (Intermediary): histamines (including liberation not immunochemical in origin)
Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 100 µg/mL
Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 0.035 mg/mL
Specific Locus Test (Mouse Lymphocyte) 75 µM
Sister Chromatid Exchange (Hamster Ovary) 300 µg/mL
Micromuscle Test (Inhalation-Rat) 0.05 ppm/6 hours/4 weeks
Morphological Transformation (Mouse Fibroblasts) 0.2 mg/L/21 days
TOLUENE 2,4-DIISOCYANATE:
TCLo (Inhalation-Mouse) 100,000 ppm/6 hours: Behavioral: general anesthetic; Lungs, Thorax, or Respiration: cyanosis; Blood: other changes
LDLo (Oral-Human) 50 mg/kg
LCLo (Inhalation-Human) 10,000 ppm/6 hours: Behavioral: general anesthetic; Lungs, Thorax, or Respiration: cyanosis; Blood: other changes

CARCINOGENIC POTENTIAL:
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, see section 16 for definitions of other ratings.

CHEMICAL | IARC | EPA | NTP | NIOSH | ACGIH | OSHA | PROP 65
---|---|---|---|---|---|---|---
Polyether Triol | | | | | No | No | No
Toluene 2.4 & 2.6-Diisocyanates | | | | | No | No | No
Toluene Disocyanate Mixture (CAS# 26471-62-5) | | | | | No | No | No

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

SENSITIZATION TO THE PRODUCT:
This product contains toluene diisocyanate compounds, which are known human skin and respiratory sensitizers. Exposure can cause allergic reactions. Cross-sensitization between different isocyanates may occur.

TOXICOLOGICAL SYNERGISTIC PRODUCTS:
None known.

REPRODUCTIVE TOXICITY INFORMATION:
This product has not been tested for reproductive toxicity.

Mutagenicity Embryotoxicity/Teratogenicity/Reproductive Toxicity: Mercury compounds, such as the trace Phenyl Mercury Neodecanoate components, can cause reproductive toxicity effects. No specific information is available.

BIOLOGICAL EXPOSURES INDICES (BEIs):
The following BEI's have been established for components, as follows:

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>SAMPLING TIME</th>
<th>BEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylenes: Methylhippuric Acid in Urine</td>
<td>End of Shift</td>
<td>1.5 g/g Creatinine</td>
</tr>
</tbody>
</table>

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 toluene diisocyanate components.

2,4-TOLUENE DIISOCYANATE:
2,4-Toluene Diisocyanate hydrolizes rapidly in aqueous solution; therefore, leaching and adsorption to sediment will not be environmentally important.

2,6-TOLUENE DIISOCYANATE:
2,6-Toluene Diisocyanate reacts readily with water; therefore, leaching of 2,6-toluene diisocyanate in soil should not be important.

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

2,4-TOLUENE DIISOCYANATE:
If released to air, a vapor pressure of 3x10^-3 mm Hg at 25°C indicates 2,4-toluene Diisocyanate will exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,4-toluene Diisocyanate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 1.7 days.

DynaTred® Part A Activator
Atmospheric degradation may also occur through contact with clouds, fog or rain. If released to water or moist soil, 2,4-toluene Diisocyanate is not expected to leach or adsorb to solids due to its rapid degradation reaction with water. 2,4-Toluene Diisocyanate is not expected to volatilize from dry soil surfaces based upon its vapor pressure. If spilled on wet land, TDI is rapidly degraded. If released into water, a crust forms around the liquid TDI and <0.5% of the original material remains after 35 days. Low concentrations of TDI hydrolyze in the aqueous environment in approximately a day.

**2,6-TOLUENE DIISOCYANATE:**
If released to air, a vapor pressure of 0.02 mm Hg at 25°C indicates 2,6-Toluene Diisocyanate will exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,6-Toluene Diisocyanate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 2.5 days. Atmospheric degradation may also occur through contact with clouds, fog or rain. If released to moist soil, 2,6-Toluene Diisocyanate is not expected to leach or adsorb to solids due to its rapid degradation reaction with water. In one experiment simulating a spill, 5.5% of the original material remained after 24 hours and in a field situation; the concentration of TDI had declined to the ppm level in 12 weeks. If released to water, 2,6-Toluene Diisocyanate is not expected to leach or adsorb to solids due to its rapid degradation reaction with water. If released into water in a spill situation, a crust forms around the liquid TDI mixture and <0.5% of the original material remains after 35 days. Low concentrations of TDI hydrolyze in the aqueous environment in approximately a day.

**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 the toluene diisocyanate components.

**TOLUENE DIISOCYANATE:**

- L<sub>C50</sub> (fathead minnow) 24 hours = 194.9 mg/L
- L<sub>C50</sub> (fathead minnow) 48 hours = 172.1 mg/L
- L<sub>C50</sub> (fathead minnow) 96 hours = 164.5 mg/L
- TLm (fathead minnow) 96 hours = 10.1 ppm (est.)

**TOLUENE DIISOCYANATE (continued):**

- L<sub>C50</sub> (Pimephales promelas fathead minnow) 48 hours = 172 mg/L/Conditions of bioassay not specified
- L<sub>C50</sub> (Pimephales promelas fathead minnow) 96 hours = 164 mg/L/Conditions of bioassay not specified

**2,6-TOLUENE DIISOCYANATE:**

- L<sub>C50</sub> (Pimephales promelas fathead minnow) 24 hours = 195 mg/L/Conditions of bioassay not specified

**OTHER ADVERSE EFFECTS:** This material is not expected to have any ozone depletion potential.

**ENVIROMENTAL 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:** Not applicable.

### 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 1133
- **HAZARD CLASS NUMBER and DESCRIPTION:** 3 (Flammable)
- **PACKING GROUP:** PG III
- **DOT LABEL(S) REQUIRED:** Class 3 (Flammable)
- **NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2012):** 128
- **MARINE POLLUTANT:** This material is not classified by the DOT as 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 1133
- **HAZARD CLASS NUMBER and DESCRIPTION:** 3 (Flammable)
- **PACKING GROUP:** PG III
- **DOT LABEL(S) REQUIRED:** Class 3 (Flammable)
- **SPECIAL PROVISIONS:** 83
- **EXPLOSIVE LIMIT & LIMITED QUANTITY INDEX:** 5
- **ERAP INDEX:** None
- **PASSENGER CARRYING SHIP INDEX:** None
- **PASSENGER CARRYING ROAD OR RAIL VEHICLE INDEX:** 60

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

- **UN IDENTIFICATION NUMBER:** UN 1133
- **HAZARD CLASS or DIVISION:** 3 (Flammable)
- **HAZARD LABEL(S) REQUIRED:** Class 3 (Flammable)
- **PACKING GROUP:** III
- **EXCEPTED QUANTITIES:** E1

**PAASSENGER and CARGO AIRCRAFT PACKING INSTRUCTION:** 355
**PAASSENGER and CARGO AIRCRAFT MAXIMUM NET QUANTITY PER PKG:** 60 L
**PAASSENGER and CARGO AIRCRAFT LIMITED QUANTITY PACKING INSTRUCTION:** 366
**PAASSENGER and CARGO AIRCRAFT LIMITED QUANTITY MAXIMUM NET QUANTITY PER PKG:** 10 L
**CARGO AIRCRAFT ONLY PACKING INSTRUCTION:** 366
**CARGO AIRCRAFT ONLY MAXIMUM NET QUANTITY PER PKG:** 220 L
**SPECIAL PROVISIONS:** A3
14. TRANSPORTATION INFORMATION (Continued)

ERG CODE: 3L
INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is classified as dangerous goods, per the International Maritime Organization.
UN No.: 1133
PROPER SHIPPING NAME: Adhesives, containing a flammable liquid
HAZARD CLASS NUMBER: 3 (Flammable)
LABELS: Class 3 (Flammable)
Packing GROUP: III
SPECIAL PROVISIONS: 223, 995
LIMITED QUANTITIES: 5 L
EXCEPTED QUANTITIES: E1
PACKING: Instructions: P001, LP01; Provisions: P1
IBC: Instructions: IBC03; Provisions: None
TANKS: Instructions: T2; Provisions: T2, TP1
EmS: F-E, S-D
STOWAGE CATEGORY: Category A.
MARINE POLLUTANT: No component of this product is designated by the IMO to be a Marine Pollutant.

ADDITIONAL 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 (TPQ) (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>2,4-Toluene Diisocyanate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2,6-Toluene Diisocyanate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Xylene</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

U.S. SARA 302 Extremely Hazardous Threshold Planning Quantity (TPQ): 2,4-Toluene Diisocyanate: 500 lb (227 kg); 2,6-Toluene Diisocyanate: 100 lb (454 kg)
U.S. SARA 304 Extremely Hazardous Reportable Quantity (RQ): 2,4-Toluene Diisocyanate: 100 lb (454 kg); 2,6-Toluene Diisocyanate: 100 lb (454 kg)
U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: Yes; 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): 2,4-Toluene Diisocyanate = 100 lb (45.4 kg); 2,6-Toluene Diisocyanate = 100 lb (45.4 kg); Xylene = 100 lb (45.4 kg);
U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): 2,4-Toluene Diisocyanate = 10,000 lb (4540 kg); 2,6-Toluene Diisocyanate = 10,000 lb (4540 kg);
California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 lists.

ADDITIONAL CANADIAN REGULATIONS:
Canadian DSL/NDISL Inventory Status: The components of this product are on the DSL Inventory.
Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Not applicable.
Canadian WHMIS Regulations: This product is classified as a Controlled Product, Hazard Classes B2 (Flammable Liquid), D1A/D2A (Poisonous and Infectious Material, Other Effects/Very Toxic: Inhalation Toxicity, Teratogenicity and Embryotoxicity), D2B (Poisonous and Infectious Material, Other effects/Toxic: Skin Irritation) as per the Controlled Product Regulations.

ADDITIONAL MEXICAN REGULATIONS:
Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

16. OTHER INFORMATION

U.S. ANSI STANDARD LABELING (Precautionary Statements): DANGER! FLAMMABLE LIQUID. TOXIC BY INHALATION. MAY CAUSE EYE, SKIN AND RESPIRATORY IRRITATION. CAN CAUSE SKIN AND RESPIRATORY SENSITIZATION AND ALLERGIC REACTION. CONTAINS COMPOUNDS THAT ARE SUSPECT CARCINOGENS. POSSES ASPIRATION HAZARD IF SWALLOWED. 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 poly pads 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.
16. OTHER INFORMATION Continued)

GLOBAL HARMONIZATION SYSTEM CLASSIFICATION:

Classification: Carcinogenic Category 2, Acute Inhalation Toxicity Category 3, Flammable Liquid Category 3, Eye Irritation Category 2, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3, Skin Irritation Category 2, Respiratory Sensitizer Category 1, Skin Sensitization Category 1, Aquatic Chronic Toxicity Category 3

Signal Word: Danger


Precautionary Statements:


Response: P370 + P378: In case of fire, stop leak if it is safe to do so. P308 + P313: IF exposed or concerned: Get medical advice/attention. P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. P305 + P351 + P353: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P357 + P313: If eye irritation persists: get medical advice/attention. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).


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

Hazard Symbols/Pictograms: GHS02, GHS06, GHS08

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Material Safety Data Sheet is presented in good faith 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 may 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: August 2012: Up-date and revise entire MSDS to include current GHS requirements. Oct 2012: Inclusion of new flash point value and subsequent changes to SDS to reflect flammability. December 2013 formula change

DATE OF PRINTING: December 31, 2013
DEFINITIONS OF TERMS

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

KEY ACRONYMS:

CHEMTREC: 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 day, for any worker, as a time-weighted average (TWA) of more than a short duration exposure sample.

DGF MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure value).

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DEFINITION OF TERMS:

DEFINITIONS OF TERMS

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

DEFINITIONS OF TERMS

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

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DEFINITIONS OF TERMS

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):
FLAMMABILITY HAZARD (continued):

- Materials with an LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 100 mg/kg.
- Materials with an LD₅₀ for acute oral toxicity is greater than or equal to 100 mg/kg.
- Materials with an LD₅₀ for acute oral toxicity is greater than or equal to 1000 mg/kg.
- Materials with an LD₅₀ for acute oral toxicity is greater than or equal to 10,000 mg/kg.
- Materials with an LD₅₀ for acute oral toxicity is greater than or equal to 100,000 mg/kg.

DEFINITIONS OF TERMS (Continued):

- REPRODUCTIVE INFORMATION:
  - A reproductive toxin is a substance that interferes in any way with the reproductive process.
  - A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines.

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.
  - Median 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. ACGI: 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. EC: European Chemicals Agency. 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 a container's package label.

CANADA: