SAFETY DATA SHEET

Pecora Deck™ 802 Base Coat

PART I

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

1. PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>IDENTIFICATION of the SUBSTANCE or PREPARATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRADE NAME (AS LABELED):</td>
</tr>
<tr>
<td>PRODUCT DESCRIPTION:</td>
</tr>
<tr>
<td>CHEMICAL NAME/CLASS:</td>
</tr>
<tr>
<td>SYNONYMYS:</td>
</tr>
<tr>
<td>RELEVANT USE:</td>
</tr>
<tr>
<td>USES ADVISED AGAINST:</td>
</tr>
</tbody>
</table>

COMPANY/UNDERTAKING IDENTIFICATION:

| SUPPLIER/MANUFACTURER'S NAME:               | Pecora Corporation         |
| ADDRESS:                                    | 165 Wambold Road, Harleysville, PA 19438 |
| EMERGENCY PHONE:                            | 800-424-9300 (CHEMTREC, 24-hours) |
| BUSINESS PHONE:                             | 215-723-6051 (Mon–Fri, 8 AM–5 PM ET) |
| PREPARATION DATE:                           | January 2004                |
| REVISION DATE:                              | November 21, 2013           |

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: Combustible Liquid Cat. 4, Carcinogenic Cat. 1B, Skin Sensitization Cat. 1, Respiratory Sensitization Cat. 1, Skin Irritation Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, Aquatic Chronic Toxicity Cat. 2

Signal Word: Danger

Hazard Statement Codes: H350, H334, H317, H315 + H320, H335, H412


Hazard Symbols/Pictograms: GHS07, GHS08

EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: This product is a viscous, grey liquid with a sweet, solvent odor.

HEALTH HAZARDS: CAUTION! May cause eye, skin, and respiratory tract irritation, especially if exposure is prolonged. May cause skin and/or respiratory sensitization. May be harmful if swallowed. Can cause central nervous system effects. Contains a compound with limited evidence of carcinogenicity and crystalline silica, a known human carcinogen by inhalation.

FLAMMABILITY HAZARD: This product is combustible and can ignite if exposed to temperatures at or above 65.5°C (150°F).

REACTIVITY HAZARD: This product can react with water. This product may become unstable if stored for more than 6 months or if exposed to high temperature.

ENVIRONMENTAL HAZARD: This product contains a trace component that can cause harm to aquatic organisms. All release to the environment should be avoided.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS®):

<table>
<thead>
<tr>
<th>Health</th>
<th>2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>2</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>1</td>
</tr>
</tbody>
</table>

See Section 16 for definitions of ratings

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

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

CANADIAN WHMIS CLASSIFICATION: Class B3, D1B, D2B. See Section 15 (Regulatory Information) for all classification details.

U.S. OSHA REGULATORY STATUS: This material is classified as hazardous under OSHA regulations.
3. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>W/W %</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Aromatic Naphtha</td>
<td>64742-94-5</td>
<td>10.0-15.0</td>
<td>Classification: Aspiration Hazard Cat. 1</td>
</tr>
<tr>
<td>Crystalline Silica/Quartz</td>
<td>14808-60-7</td>
<td>0.1-1.0</td>
<td>SELF CLASSIFICATION</td>
</tr>
<tr>
<td>Toluene Diisocyanate Prepolymer</td>
<td>26471-62-5</td>
<td>0.1-1.0</td>
<td>Classification: Carcinogenic Cat. 1B</td>
</tr>
<tr>
<td>Proprietary Urethane Polymer</td>
<td>Balance</td>
<td></td>
<td>Classification: Not Applicable</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.

DESCRIPTION OF FIRST-AID MEASURES: Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should treat symptoms and overexposures to this product.

INHALATION: If dusts 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: Dermatitis or other pre-existing skin disorders may be aggravated by overexposures to this product.

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

5. FIRE-FIGHTING MEASURES

FLASH POINT (TCC): 57.2°C (135°F)

AUTOIGNITION: Unknown.

FLAMMABLE LIMITS IN AIR: LEL: 1.52%, UEL: 12.0%

EXTINGUISHING MEDIA:

- **SUITABLE EXTINGUISHING MEDIA:** Use extinguishing material suitable to the surrounding fire, including foam, halon, carbon dioxide and dry chemical.
- **UNSUITABLE EXTINGUISHING MEDIA:** Water should be used with care.

PROTECTION OF FIREFIGHTERS:

SPECIAL FIRE AND EXPLOSION HAZARDS: This product is combustible and can be ignited when exposed to its flashpoint. Not sensitive to mechanical impact under normal conditions. May be sensitive to static discharge under normal conditions. Closed containers may develop pressure and rupture in event of fire or if contaminated with water.

ADVICE TO FIREFIGHTERS: 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.
6. ACCIDENTAL RELEASE MEASURES (Continued)

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: Note: reacted material may be allowed to harden while still in containers.

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, polyponds, 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.

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. This product should not be stored for more than 6 months. Store below 27°C (80°F).

PRODUCT USE: This product is a urethane. Follow all industry standards for use of this product.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Guideline</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline Silica/Quartz</td>
<td>14808-60-7</td>
<td>ACGIH TLV TW A</td>
<td>0.025 mg/m³ respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TW A</td>
<td>30 mg/m³ / % SiO₂ + 2 Total Dust; 10 mg/m³ / % SiO₂ + 2 respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TW A</td>
<td>0.05 mg/m³ respirable dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH IDLH</td>
<td>50 mg/m³</td>
</tr>
<tr>
<td>2-Methoxy-1-Methylc yl Acetate</td>
<td>108-86-6</td>
<td>DFG MAK TW A</td>
<td>50 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK PEAK</td>
<td>1x MAK 1-hr interval, 5 min. average value, 4 per shift</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AIHA WEEL TW A</td>
<td>50 ppm</td>
</tr>
<tr>
<td>Heavy Aromatic Naphtha</td>
<td>64742-94-5</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Toluene Diocysante Peopolymer</td>
<td>26471-42-5</td>
<td>ACGIH TLV TW A</td>
<td>0.036 mg/m³ NCR = 0.007 mg/m³ SEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH TLV STEL</td>
<td>0.02 mg/m³ NCR = 0.021 mg/m³ SEN</td>
</tr>
</tbody>
</table>

NE = Not Established. SEN = Confirmed Potential for Worker Sensitization as a Result of Dermal Contact and/or Inhalation Exposure. See Section 16 for Definitions of Terms Used.

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8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):
VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.


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.

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.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Viscous liquid.
COLOR: Grey.
MOLECULAR WEIGHT: Mixture.
ODOR: Sweet, solvent.
SPECIFIC GRAVITY: 1.2
RELATIVE VAPOR DENSITY (air = 1): Heavier than air.
SOLUBILITY IN WATER: Reacts.
MELTING/FREEZING POINT: Not established.
PERCENT VOLATILE BY VOLUME: 10-15%
FLASH POINT: 57.2°C (135°F)
FLAMMABLE LIMITS (in air by volume, %): Lower: 1.52%; Upper: 12.0%
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.

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.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under normal circumstances of use and handling. Can become unstable at elevated temperature or if stored more 6 months or more. Closed containers may develop pressure and rupture on prolonged exposure to heat or if contaminated with water.

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

INCOMPATIBLE MATERIALS: This product is not compatible with strong oxidizers, strong acids, amines, alcohols, bases, amides, phenols, mercaptans, ureas, surfactants and water.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion: Thermal decomposition of this product can generate carbon, nitrogen, sulfur and titanium oxides, aromatic hydrocarbons, hydrogen cyanide. Hydrolysis: Toluenediamine.

POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: This product may undergo hazardous polymerization if exposed to incompatible materials or heat.

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: Contact may irritate the skin and cause redness and discomfort. Prolonged or repeated skin contact may cause dermatitis (dry, red skin). Eye contact may cause redness, pain, and tearing. Skin contact may cause sensitization and allergic reaction.

SKIN ABSORPTION: The solvent components may be absorbed through intact skin and cause systemic effects.

INGESTION: If the product is swallowed, it can irritate the mouth, throat, and other tissues of the gastro-intestinal system and may cause nausea, vomiting, and diarrhea. Ingestion of large amounts may be harmful.

INHALATION: Inhalation of vapors or fumes of this product may cause irritation of the respiratory system. Symptoms include nose irritation, dry or sore or burning throat, runny nose, shortness of breath, wheezing and laryngitis. Coughing with chest pain or tightness may also occur, frequently at night. Inhalation can cause adverse central nervous system effects, including dizziness, incoordination and nausea. These symptoms may occur during exposure or may be delayed for several hours. Inhalation may also cause sensitization of the respiratory system and cause allergic reaction to both skin and respiratory system.

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

POTENTIAL HEALTH EFFECTS (continued):

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

CHRONIC EFFECTS: Prolonged or repeated skin contact may cause dermatitis (dry, red skin). Due to the presence of isocyanate compounds, this product may cause skin and/or respiratory sensitization. The Crystalline Silica/Quartz component is a known human carcinogen by inhalation.

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.

HEAVY AROMATIC NAPHTHA:
Standard Draize Test (Skin/Rabbit) 300 µL/24 hours: Mild
LD50 (Inhalation-Rat) > 590 mg/m3/4 hours
LD50 (Skin/Rabbit) > 2 mL/kg: Behavioral; somnolence (general depressed activity), changes in motor activity (specific assay), irritability

LDLo (Oral-Rat) 5 mL/kg: Sense Organs and Special Senses (Olfaction); effect, not otherwise specified; Sense Organs and Special Senses (Eye); effect, not otherwise specified; Skin and Appendages; hair

CRYSTALLINE SILICA:
LCLo (Inhalation-Human) 300 mg/m3/10 years:intermittent: Systemic effects
TCLo (Inhalation-Human) 16 nppc/08/17.9 years:intermittent: Pulmonary system effects

LC50 (Inhalation-Rat) 50 mg/m3/6 hours/71 weeks:intermittent: Carcinogenic effects
TCLo (Inhalation-Rat) 80 mg/m3/72 weeks:intermittent: Lungs, Thorax, or Respiration: fibrosis; Lungs, Thorax, or Respiration: Blood: changes in spleen; Immunological Including Allergic: decrease in cellular immune response

LD50 (Inhalation-Rat) 108 mg/m3/6 hours/3 days:intermittent: Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases, Enzyme inhibition, induction, or change in blood or tissue levels: other oxidoreductases, Metabolism (Intermediary); other proteins

TCLo (Inhalation-Rat) 58 mg/m3/13 weeks:intermittent: Lungs, Thorax, or Respiration: other changes; Endocrine: changes in thymus weight; Blood: changes in leukocyte (WBC) count

TCLo (Inhalation-Mouse) 1475 µg/m3/8 hours/21 weeks:intermittent: Lungs, Thorax, or Respiration: other changes

TCLo (Inhalation-Mouse) 4932 µg/m3/24 hours/39 weeks:intermittent: Endocrine: changes in spleen weight; Immunological Including Allergic: decrease in humoral immune response

TCLo (Inhalation-Guinea Pig) 28 mg/m3/3 weeks:intermittent: Lungs, Thorax, or Respiration: other changes, changes in lung weight; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: other

TDLo (Intratracheal-Rat) 45 mg/kg: Carcinogenic effects
TDLo (Intratracheal-Rat) 90 mg/kg: Equivocal tumorigenic agent
TDLo (Intratracheal-Rat) 90 mg/kg: AR
TDLo (Intratracheal-Rat) 111 mg/kg: Carcinogenic effects
TDLo (Intratracheal-Rat) 111 mg/kg: AR
TDLo (Intratracheal-Rat) 100 mg/kg/19 weeks:intermittent: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: tumors
TDLo (Intrapleural-Rat) 90 mg/kg: Carcinogenic effects
TDLo (Intrapleural-Hamster) 83 mg/kg: Tumorigenic: neoplastic by RTECS criteria, tumors at site of application

TDL (Implant-Rat) 900 mg/kg: Neoplastic effects
TDL (Implant-Mouse) 4000 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Kidneys, Bladder tumors
TDL (Implant-Mouse) 4000 mg/kg: Equivocal tumorigenic agent
TDL (Intravenous-Rat) 90 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Blood: lymphoma, including Hodgkin's disease
TDL (Intravenous-Rat) > 40 mg/kg/4 weeks:intermittent: Equivocal tumorigenic agent
TDL (Intravenous-Rat) 450 mg/kg/4 weeks:intermittent: Neoplastic effects
TDL (Implant) 4554 mg/kg: Equivocal tumorigenic agent
TDL (Intrapleural-Rat) 200 mg/kg: Equivocal tumorigenic agent
TDL (Intrapleural-Rat) 1000 mg/kg: Carcinogenic effects
TDL (Intrapleural-Rat) 100 mg/kg: Neoplastic effects
TDL (Intrapleural-Rat) 100 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration: fibrosis, focal (pneumoniosis), tumors

LDLo (Intrapleural-Rat) 90 mg/kg
LDLo (Intrapleural-Rat) 200 mg/kg
LDLo (Intrapleural-Mouse) 40 mg/kg
LDLo (Intrapleural-Dog, adult) 20 mg/kg

MICronucleus Test (Human-Lung) 40 cells/tube
MICronucleus Test (Hamster-Lung) 160 µg/cm²

1-METHOXY-2-PROPYL ACETATE:
LDLo (Oral-Rat) 8532 mg/kg
LDLo (Oral-Rat) 9000 mg/kg: behavioral: coma
LDLo (Oral-Mouse) > 5000 mg/kg: Behavioral: coma
LDLo (Skin-Rabbit) > 5 gm/kg
LDLo (Intrapерitoneal-Mouse) 750 mg/kg
LDLo (Intrapерitoneal-Mouse) > 1500 mg/kg: Behavioral: coma
TCLo (Intrapерitoneal-Rat) > 590 mg/m3/4 hours: Behavioral: alteration of classical conditioning
TCLo (Intrapерitoneal-Rat) 237 mg/m3/30 days:intermittent: Behavioral: alteration of classical conditioning

TOLUENE DISOCYANATE PREPOLYMER:
TCLo (Inhalation-Human) 0.014 ppm/30 minutes: Lungs, Thorax, or Respiration: bronchiolar constriction, respiratory obstruction
Open Irritation Test (Skin/Rabbit) 500 mg: Severe
LDLo (Oral-Rat) 4130 mg/kg
LDLo (Oral-Mouse) 1950 mg/kg
LDLo (Skin-Rabbit) > 10 mL/kg
LCLo (Inhalation-Mouse) 9.7 ppm/4 hours
11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

**TOLUENE DIISOCYANATE PREPOLYMER (continued):**

TDLo (Oral-Rat) 31,500 mg/kg/103 weeks-intermittent: Tumorogenic: carcinogenic by RTECS criteria; Skin and Appendages: tumors; Gastrointestinal: tumors

TDLo (Oral-Rat) 63,500 mg/kg/2 years-intermittent: Tumorogenic: carcinogenic by RTECS criteria; Skin and Appendages: tumors

TDLo (Oral-Rat) 31,500 mg/kg/105 weeks-intermittent: Tumorogenic: neoplastic by RTECS criteria; Gastrointestinal: tumors; Liver: tumors

TDLo (Oral-Mouse) 63,000 mg/kg/105 weeks-intermittent: Tumorogenic: carcinogenic by RTECS criteria; Blood: tumors, lymphoma, including Hodgkin's disease

TDLo (Oral-Mouse) 63,000 mg/kg/105 weeks-intermittent: Tumorogenic: carcinogenic by RTECS criteria; Vascular: tumors; Liver: tumors

TDLo (Oral-Mouse) 7800 mg/kg/11 weeks-intermittent: Related to Chronic Data: death

TDLo (Oral-Mouse) 7 gm/kg/14 days-intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Related to Chronic Data: death

TDLo (Skin-Mouse) 180 mg/kg/3 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure); Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 80 mg/kg/3 days-intermittent: Immunological Including Allergic: hypersensitivity delayed; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 15 mg/kg/3 days-intermittent: Immunological Including Allergic: increase in cellular immune response

TDLo (Skin-Mouse) 110 mg/kg/12 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure); Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 160 mg/kg/2 days-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: hepatic: microsomal mixed oxidase (dealkylation, hydroxylation, etc.), Metabolism (Intermediary): other proteins

CARCINOGENIC POTENTIAL: The following table summarizes the carcinogenicity listing for the components of this product.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>IARC</th>
<th>NTP</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>PROP 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline Silica/Quartz</td>
<td>1</td>
<td>K</td>
<td>Ca</td>
<td>A2</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Heavy Aromatic Naphtha</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-Methoxy-1-Methylethyl Acetate</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Toluene Diisocyanate Prepolymer</td>
<td>2B</td>
<td>R</td>
<td>Ca</td>
<td>TLV-A4</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>


IRRITANT OF PRODUCT: This product may irritate contaminated tissue, especially if contact is prolonged.

SENSITIZATION TO THE PRODUCT: This product can cause human skin or respiratory sensitization. Isocyanates, in general, can cause skin discoloration (staining) and hardening of the skin after repeated exposures. Once a person is sensitized, contact with even a small amount of isocyanate can cause outbreaks of dermatitis with symptoms such as redness, rash, itching and swelling. This can spread from the hands or arms to the face and body. Also, due to the isocyanate components, inhalation can cause sensitization, even when concentration is as low as 0.0003 to 0.03 ppm and can occur after single or repeated exposure. Following removal from exposure, some sensitized workers may continue to show a slow decline in lung function and have persistent respiratory problems such as asthmatic symptoms, chronic bronchitis and hypersensitivity to isocyanates for months or years. Others recover complete lung function within months if they have no further isocyanate exposure.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: None known.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information regarding the effects of this product and its components on the human reproductive system.

Mutagenicity: Both positive and negative results have been produced in tests involving the Toluene Diisocyanate Prepolymer compound.

Embryotoxicity/Teratogenicity/Reproductive Toxicity: The components of this product are not reported to produce embryotoxic, teratogenic or reproductive effects in humans.

BIOLOGICAL EXPOSURES INDICES (BEIs): Currently, there are no BEI’s established for any component of this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil. No data is available for components.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability.

2-METHOXY-1-METHYLETHYL ACETATE: This compound is readily biodegradable in activated sludge (OECD 301F, 99% by DOC and OECD 301C, 87% by BOD, after 28 days and in soil (DTSO < 1 day). This chemical is stable to chemical hydrolysis in water at pH 4 and 7, whereas it is hydrolyzed at pH 9 with half-life of 8.10 days at 25°C. Direct photo-degradation is not expected because the material has no absorption band in the UV and VIS region, whereas indirect photo-degradation may occur as a result of reactions with photochemically generated hydroxy radicals, with the half-life of 3.1 hours. Although direct photo-degradation is not expected, this compound in air decomposes and disappears by photolytic reactions with photochemically generated hydroxy radicals. The indirect photochemical hydroxyl radical photolysis has an estimated half-life of 32 hours with an estimated rate constant of 1.19x10-11 cm3/mol sec and an assumed hydroxyl radical concentration 0.5x106 OH/cm3. For these reasons, there is little potential for accumulation of the compound in air.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential. Available data for components indicate that bioconcentration is not a significant hazard.
12. ECOLOGICAL INFORMATION (Continued)

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 data are available for a component. Only select data are presented in this SDS; contact Pecora for information on additional data available.

2-METHOXY-1-METHYLETHYL ACETATE:
NOEC (Daphnia magna Water flea) 48 hours = 278 mg/L, open system, static, calculated based on nominal concentrations, because measured concentrations were >80% of nominal concentrations
EC50 (Phyto bacterium phosphoreum Bacteria) 15 minutes = 5625 mg/L; Microtox test
EC50 (Daphnia magna Water flea) 48 hours = 373 mg/L, open system, static

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 be a hazardous waste as defined by U.S. federal regulation (40 CFR 261) if discarded or disposed. It has the characteristic of Ignitibility. 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: D001.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: This product can be classified as Dangerous Goods, per U.S. DOT regulations, under 49 CFR 172.101. This classification is applicable to U.S. ground shipments only; under other jurisdictions, this product is not classified.

UN IDENTIFICATION NUMBER: NA 1993
PROPER SHIPPING NAME: Combustible liquid, n.o.s. (Heavy Aromatic Naphtha, 2-Methoxy-1-Methylethyl Acetate)
HAZARD CLASS NUMBER and DESCRIPTION: Combustible Liquid
PACKING GROUP: PG II
DOT LABEL(S) REQUIRED: None
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2012): 128
MARINE POLLUTANT: The components of this product not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101).

Note: If non bulk packages (119 gallons or less) are shipped by ground domestically, this product is not regulated under DOT's Hazardous Material Regulations so non-bulk packages of it ship via ground domestically as a non-hazardous material.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is NOT classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is NOT classified as dangerous goods, per the International Air Transport Association.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is not classified as dangerous goods, per the International Maritime Organization.

15. REGULATORY INFORMATION

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)</th>
<th>SECTION 304 RQ</th>
<th>SECTION 313 TRI (threshold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene Diisocyanate Prepolymer</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): Toluene Diisocyanate Prepolymer = 100 lb (45.5 kg).

U.S. CLEAN AIR ACT (CA 112r) THRESHOLD QUANTITY (TO): The Toluene Diisocyanate Prepolymer =10,000 lb (4550 kg).

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The Toluene Diisocyanate Prepolymer component is on the California Proposition 65 lists. WARNING: This product contains a chemical known to the State of California to cause cancer.

ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDISL INVENTORY STATUS: The components of this product listed by CAS# in Section 3 (MATERIAL IDENTIFICATION) are listed on the DSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA Priorities Substances Lists.

CANADIAN WHMIS REGULATIONS: This product is classified as a Controlled Product, Hazard Classes B3 (Combustible Liquid) and D2B (Immediate Acute Toxicity/Irritation/Sensitization) 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): CAUTION! COMBUSTIBLE LIQUID. MAY CAUSE SKIN AND RESPIRATORY SENSITIZATION. MAY CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION, ESPECIALLY IF EXPOSURE IS PROLONGED. CONTAINS COMPOUNDS THAT IS A SUSPECT CARCINOGEN AND CRYSTALLINE SILICA/QUARTZ, A KNOWN HUMAN CARCINOGEN BY INHALATION. MAY POLYMERIZE IF SUBJECT TO HIGH TEMPERATURES. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not touch 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 polypond 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: Combustible Liquid Category 4, Carcinogenic Category 1A, Skin Sensitization Category 1, Respiratory Sensitization Category 1, Skin Irritation Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Respiratory Irritation by Inhalation) Single Exposure Category 3, Aquatic Chronic Toxicity Category 2

Signal Word: Danger


Precautionary Statements:


HAZARD SYMBOLS/PICTOGRAMS: GHS07, 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 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: October 2012: Up-date and revise entire MSDS to include current GHS requirements.

DATE OF PRINTING: November 21, 2013

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:

DFG MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

DIW: Maximum Exposure Concentration.

EXOS: Exposure Limit Standard.

IDLH: Immediately Dangerous to Life and Health.

LOQ: Limit of Quantitation.

TLV: Threshold Limit Value.

PEL: OSHA's Permissible Exposure Limits.

NIOSH: National Institute for Occupational Safety and Health.

NIOSH REL: NIOSH's Recommended Exposure Limits.

STEL: Short Term Exposure Limit.

Threshold Limit Value.

NEC: Not Established.

NRC: Notice of Intended Change.

NOEL: No Observed Effect Level.

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DEFINITIONS OF TERMS (Continued)

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (T8), PEL® or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the ABA

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued)

PHYSICAL HAZARD (continued): Reactives: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air. Substances that polymerize or can decompose exothermically in the presence of water. Substances that may react with water. Organic Peroxides: Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; these materials may not self-heat. Explosive substances: Substances that have a fire hazard and either a minor blast hazard or a minor projection hazard but, do not have a mass explosion hazard. Compressed Gases: Pressure: > 514.7 atm absolute at 50°C (122°F) (Class IIIB). Pyrophorics: Substances: Substances that, either in concentration tested, exhibit a mean burning time less than or equal to the mean burning time of a 3.2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the mean pressure rise time of a 1:1 potassium chlorate/cellulose mixture. Substance: Materials that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential for a high risk cause greater than that of a fire or explosion. Pyrophorics: Add to the definition of Flammability 4. Oxidizers: No 4 rating. Unstable Reactives: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and pressure and have a high potential for a high risk, but neither a fire nor a projection hazard. NARROW NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS: HEALTH HAZARD: Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC50 for acute inhalation toxicity greater than 50,000 ppm but less than or equal to 200,000 ppm. Gases with a pressure rise of a 1:1 aqueous sodium chlorate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that, either in concentration tested, exhibit a mean burning time less than or equal to the mean burning time of a 3.2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the mean pressure rise time of a 1:1 potassium chlorate/cellulose mixture.
NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

**FLAMMABILITY HAZARD** (continued): 2 (continued): Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocotton 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 less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL, and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL, and below 10 W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. 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 thermal or mechanical shock at elevated temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

**FLAMMABILITY LIMITS IN AIR**:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA): Flash Point: Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. Autoignition Temperature: Minimum temperature of a solid, liquid, or gas, required to initiate or cause self-sustained combustion in air with no other source of ignition. LEL: Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. UEL: Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

**TOXICOLOGICAL INFORMATION**:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. LD₅₀: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC₅₀: Lethal Concentration (gases) that kills 50% of the exposed animals. ppm: Concentration expressed in parts of material per million parts of air or water. mg/m³: Concentration expressed in weight of substance per volume of air. mg/kg: Quantity of material, by weight, administered to a test subject, based on their weight in kg. TD₅₀: Lowest dose to cause a symptom. TCL₅₀: Lowest concentration to cause a symptom. TD₅₃: LELₜ₅₃ and LD₃₅₃ or TC₅₃: TCL₅₃ and TLC₅₃: 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. ARS: 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: ACGIH: American Conference of Governmental Industry 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.

**REPRODUCTION INFORMATION**: A mutagen 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 concentration of a flammable substance is known to concentrate plant or animal matter. TLM: Median threshold limit: log Kₐ or log Kₐ. 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 Industry Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT, CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material’s package label.

**CANADA**: