SAFETY DATA SHEET

PECORA CORPORATION®
Architectural Weatherproofing Products
U.S.A. • since 1862

PECORA P-75 PRIMER

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 IDENTIFICATION of the SUBSTANCE or PREPARATION

PRODUCT IDENTIFIER/TRADE NAME (AS LABELED)	**PECORA P-75 Primer**
OTHER MEANS OF IDENTIFICATION	Primer
RECOMMENDED PRODUCT USE:	Sealant Primer
RESTRICTIONS ON USE:	Other than recommended use

1.2 U.S. COMPANY/UNDERTAKING IDENTIFICATION:

U.S. 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:	April 29, 2025
REVISION DATE:	New

This product is sold for commercial use. This SDS 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.

2. HAZARD IDENTIFICATION

2.1 GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian WHMIS HPR-GHS 2015.

2.1.1 Classification:

Flammable Liquid Category 2; Reproductive Toxicity Category 2; Skin Irritation Category 2; Skin Sensitization Category 1, Eye Corrosion-Irritation Category 2A; Respiratory Sensitization Category 1, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3; Specific Target Organ Toxicity (Inhalation-Auditory Organs, Immune System) Repeated Exposure Category 2, Aquatic Chronic Toxicity Category 3

2.1.2 Signal Word: Danger

2.1.3 Hazard Statements:

H225: Highly flammable liquid and vapor. H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335: May cause respiratory irritation. H372: Causes damages to auditory organs and immune system through prolonged or repeated inhalation exposure. H412: Harmful to aquatic life with long-lasting effects.

2.1.4 Hazards Not Otherwise Classified (HNOC): None known.

2.1.5 Physical Hazards Not Otherwise Classified (PHNOC): Static accumulating in a flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

2.1.6 Precautionary Statements:

2.1.6.1 Prevention:

P210: Keep away from heat, sparks, open flames, hot surfaces; No Smoking. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, lighting or equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist, vapors, or spray. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves, clothing, eye protection and face protection. P284: [In case of inadequate ventilation] Wear respiratory protection.

2.6.1.2 Response:

P370 + P378: In case of fire: Use materials appropriate for surrounding fire for extinction. P318: If exposed or concerned, get medical advice. P303+P361+P353: IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower]. P333 + P313: If skin irritation or rash occurs, get medical attention. P361 + P364: Take off immediately all contaminated clothing and wash before reuse. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P317: If eye irritation persists: get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

2.6.1.3 Storage:

P403 + P233 + P235: Store in a well-ventilated place. Keep container tightly closed. Keep cool. P405: Store locked up.

2.6.1.4 Disposal:

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

2.1.7 Hazard Symbols/Pictograms: GHS02, GHS07, GHS08

2.2 Percent of Unknown Acute Toxicity: This product is a mixture; the following are percentages of unknown acute toxicity, by route of exposure. Oral: 0% Dermal 30-40%, and Inhalation: 0%.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	CAS #	W/W%	LABEL ELEMENTS GHS Classification under U.S. OSHA Hazard Communication Standard & Canadian WHMIS (HPR-GHS) 2015 Hazard Statement Codes
Toluene	108-88-3	45-55%	Harmonized Classification: Flammable Liquid Cat. 2, Aspiration Hazard Cat. 1, Reproductive Toxicity Cat. 2, Skin Irritation Cat. 2, Specific Target Organ Toxicity (Inhalation/Ingestion-Narcotic Effect) Single Exposure Cat. 3, Specific Target Organ Toxicity (Central and Peripheral Nervous System, Hearing Organs) Repeated Exposure Cat. 2 Notified and Self-Classification: Aquatic Chronic Toxicity Cat. 3, Eye Irritation/Corrosion Cat. 2A Hazard Statements: H225: Highly flammable liquid and vapor. H361df: Suspected of damaging the unborn child. Suspected of damaging fertility. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. H373: May cause damage to hearing organs, central and peripheral nervous systems through prolonged or repeated exposure.
Proprietary Aromatic Polyisocyanate		25-45%	Self-Classification Based on Mfg. SDS: Skin Irritation Cat 3, Skin Sensitization Cat. 1, Eye Corrosion/Irritation Cat. 3, Aquatic Chronic Toxicity Cat. 3 Hazard Statements: H316: Causes mild skin irritation. H317: May cause an allergic skin reaction. H320: Causes Eye Irritation. H412: Harmful to aquatic life with long-lasting effects.
Proprietary Glycol Ether		3-20%	Harmonized Classification: Flammable Liquid Cat. 3 Hazard Statements: H226: Flammable liquid and vapor.
Xylene	1330-20-7	3-20%	Harmonized Classification: Flammable Liquid Cat. 3, Acute Dermal Toxicity Cat. 4, Acute Inhalation Toxicity Cat. 4, Skin Irritation Cat. 2 Self-Classification: Eye Corrosion-Irritation Cat. 2A Hazard Statements: H226: Flammable liquid and vapor. H312 + H332: Harmful in contact with skin or if inhaled. H315:Causes skin irritation. H319: Causes serious eye irritation.
Ethyl Benzene	100-41-4	0.1-5%	Harmonized Classification: Flammable Liquid Cat. 2, Acute Inhalation Toxicity Cat. 4, Specific Target Organ Toxicity (Inhalation-Auditory Organs) Repeated Exposure Cat. 2 Notified Classification: Aquatic Chronic Toxicity Cat. 3 Hazard Statements: H225: Highly flammable liquid and vapor. H332: Harmful if swallowed or in inhaled. H373: May cause damages to auditory organ through prolonged or repeated inhalation exposure. H413: May cause long-lasting harmful effects to aquatic life.
Toluene-2,4-Diisocyanate	584-84-9	0.1-0.3%	Harmonized Classification: Carcinogenic Cat. 2, Acute Inhalation Toxicity Cat. 2, Skin Irritation Cat. 2, Skin Sensitization Cat. 1B, Eye Corrosion-Irritation Cat. 2A, Respiratory Sensitization Cat. 1, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Cat. 3, Aquatic Chronic Toxicity Cat. 3 Hazard Statements: H351: Suspected of causing cancer. H315:Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H330: Fatll if inhaled. H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335: May cause respiratory irritation. H412: Harmful to aquatic life with long-lasting effects.

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

4.1 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.

4.2 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 SDS to physician or other health professional with victim(s).

4.2.1 Inhalation: If aerosols of this material are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

4.2.1.1 GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

4.2.2 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.

4.2.2.1 GHS Precautionary Statements for Skin Exposure: P303+P361+P353: IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower]. P333 + P313: If skin irritation or rash occurs, get medical attention. P361 + P364: Take off immediately all contaminated clothing and wash before reuse.

4.2.3 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.

4.2.3.1 GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P317: If eye irritation persists: get medical help.

4.2.4 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.

4.2.4.1 GHS Precautionary Statements for Ingestion Exposure: None appliable.

4.3 MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions, skin and auditory conditions may be aggravated by exposure to this product.

4. FIRST-AID MEASURES

4.4 IMPORTANT SYMPTOMS AND EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Identification) and 11 (Toxicological Information) for more detailed information.

4.4.1 Acute:

Symptoms/Effects: May be harmful if swallowed, in contact with the skin or if inhaled. Irritant to eyes respiratory system. Causes serious eye irritation. May cause drowsiness or dizziness. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, dry or sore throat, central nervous system depression, dizziness, headache, narcosis.

Symptoms/Effects After Skin Contact: Dermatitis, dry skin.

Symptoms/Effects After Eye Contact: Moderate to severe irritation of eye tissue.

Symptoms/Effects After Ingestion: AFTER ABSORPTION OF LARGE QUANTITIES: Central nervous system depression. Headache. Nausea. Vomiting. Abdominal pain. Disturbed motor response. Disturbances of consciousness.

4.4.2 Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin, itching, cracking of the skin, skin rash/inflammation). May cause skin sensitization.

Symptoms/Effects After Accidental Injection/Ingestion: None known.

Symptoms/Effects After Inhalation: May cause damage to the auditory system and organs, respiratory sensitization and allergic reactions.

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

5. FIRE-FIGHTING MEASURES

5.1 FLASH POINT: 22°C (71.6°F)

5.2 AUTOIGNITION: Product not tested. Component information is as follows.

Ethyl Benzene: 432°C (810°F) Toluene: 480°C (896°F) Xylene: 464°C (867°F)

5.3 FLAMMABLE LIMITS IN AIR: Product not tested. Component information is as follows.

	Lower (LEL):	Upper (UEL):
Ethyl Benzene	..0.8%	..6.7%
Toluene:	1.2%	7.1%
Xylenes:	1.0%	..7.0%

5.4 FIRE EXTINGUISHING MEDIA: Use materials appropriate for surrounding materials. ABC extinguishers, carbon dioxide, foam, dry chemical and flooding quantities of water.

5.5 UNSUITABLE EXTINGUISHING MEDIA: None known.

5.6 SPECIAL HAZARDS ARISING FROM THE PRODUCT: Highly flammable liquid and vapor. Not sensitive to mechanical impact under normal conditions. Vapors may form explosive mixtures in air. Vapors can travel long distances and flashback to ignition source. Closed containers may develop pressure and rupture in event of fire or if contaminated with water.

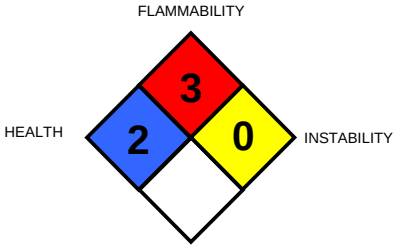
5.6.1 Explosion Sensitivity to Mechanical Impact: Not Sensitive.

5.6.2 Explosion Sensitivity to Static Discharge: Vapors or aerosols of this product may be ignited by static electrical energy.

5.7 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.

5.7.1 GHS Precautionary Statements for Fire-Fighters: P370 + P378: In case of fire: Use materials appropriate for surrounding fire for extinction.

NFPA RATING



Hazard Scale: **0** = Minimal 1 = Slight
2 = Moderate **3** = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: An accidental release may 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. Avoid contact with water.

6.2 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.

6.2.1 Small Spills: For releases of 1 drum or less, Level D Protective Equipment (gloves, chemical resistant apron, boots, and eye protection) should be worn.

6.2.2 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.**

6. ACCIDENTAL RELEASE MEASURES (Continued)

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

6.3.1 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.

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

6.5 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.

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

7. HANDLING and STORAGE

7.1 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 or aerosols. Do not taste or swallow. Use only with adequate ventilation. Wash hands after handling this product. 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. Keeping work areas clean is essential. Use work surfaces that can be easily decontaminated. Maintain good personal hygiene.

7.1.1 GHS Statements for Safe Handling: P210: Keep away from heat, sparks, open flames, hot surfaces; No Smoking. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, lighting or equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist, vapors, or spray. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves, clothing, eye protection and face protection. P284: [In case of inadequate ventilation] Wear respiratory protection.

7.2 CONDITIONS FOR SAFE STORAGE and ANY INCOMPATIBILITIES: 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. Store container below 27°C (80°F) to avoid possible reactions related to heat and overpressure of containers.

7.2.1 This product would be incompatible with oxidizers and combustible materials; water may cause a thermal reaction due to the isocyanate components. Avoid direct flame and high temperatures. See Section 10 (Stability and Reactivity) for additional information on possible incompatibilities.

7.2.2 GHS Statements for Safe Storage: P403 + P233 + P235: Store in a well-ventilated place. Keep container tightly closed. Keep cool. P405: Store locked up.

7.3 PRODUCT USE: This product is used as a primer coating. Follow all industry standards for use of this product.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

8.1 CONTROL PARAMETERS, INCLUDING OCCUPATIONAL EXPOSURE GUIDELINES OR BIOLOGICAL EXPOSURE LIMITS AND THE SOURCE OF THOSE VALUES:

8.1.1 Ventilation and Engineering Controls: Use with adequate, explosion proof ventilation to ensure exposure levels are maintained below the limits provided further in this section.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

8.1 CONTROL PARAMETERS, INCLUDING OCCUPATIONAL EXPOSURE GUIDELINES OR BIOLOGICAL EXPOSURE LIMITS AND THE SOURCE OF THOSE VALUES (continued):

8.1.2 U.S. Occupational/Workplace Exposure Limits/Guidelines:

Chemical Name	CAS #	Guideline	Value
Ethyl Benzene	100-41-4	ACGIH TLV TWA OSHA PEL TWA NIOSH REL TWA NIOSH REL STEL NIOSH IDLH	20 ppm 100 ppm 100 ppm 125 ppm 800 ppm (10% of LEL)
Toluene	108-8-3	ACGIH TLV TWA OSHA PEL TWA OSHA PEL STEL NIOSH REL TWA NIOSH REL STEL NIOSH IDLH	20 ppm OTO 200 ppm 300 (ceiling); 500 ppm (10 min. peak per 8-hr shift) 100 ppm 150 ppm 500 ppm
2,4-Toluene Diisocyanate	584-84-9	ACGIH TLV TWA ACGIH TLV STEL OSHA PEL STEL NIOSH REL TWA/STEL NIOSH IDLH	0.001 ppm IVF; Skin, DSEN, RSEN 0.005 ppm IVF; Skin, DSEN, RSEN 0.02 ppm (ceiling) See Pocket Guide App. A 2.5 mg/m^3 (Ca)
Xylene	1330-20-7	ACGIH TLV TWA ACGIH TLV STEL OSHA PEL TWA OSHA PEL STEL NIOSH REL TWA NIOSH REL STEL NIOSH IDLH	100 ppm 150 ppm 100 ppm 150 ppm (vacated 1989 PEL) 100 ppm 150 ppm 900 ppm

See Section 16 for Definitions of Terms Used. DSEN: Danger of Sensitization of the Skin. RSEN: Danger of Sensitization of the Airways

8.1.3 Biological Exposure Indices (BEIs): Currently, the following BEI's have been established for some components.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Ethyl Benzene • Sum of Mandelic Acid and Phenylglycoxylic Acid in Urine	• End of Shift	• 0.15 g/g Creatinine
2,4-Toluene Diisocyanate • Toluene in Urine	• End of Shift	• 1.5 µg/g Creatinine
Toluene • o-Cresol in Urine • Toluene in Urine • Toluene in Blood	• End of Shift • End of Shift • Prior to Last Shift of Workweek	• 0.02 mg/L • 0.03 mg/L • 0.3 mg/g creatinine
Xylenes • Methylhippuric Acid in Urine	• End of Shift	• 0.15 g/g Creatinine

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE): The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including the Respiratory Protection Standard (29 CFR 1910.134), Eye Protection Standard 29 CFR 1910.13, the Hand Protection Standard 29 CFR 1910.138, and the Foot Protection Standard 29 CFR 1910.136), equivalent standards of Canada (including the Canadian CSA Respiratory Standard Z94.4-93-02, the CSA Eye Protection Standard Z94.3-M1982, Industrial Eye and Face Protectors and the Canadian CSA Foot Protection Standard Z195-M1984, *Protective Footwear*). Please reference applicable regulations and standards for relevant details.

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

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

8.2.3 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.

8.2.4 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

9.1 FORM: Liquid.
9.2 COLOR: Clear, colorless.
9.3 MOLECULAR WEIGHT: Mixture.
9.4 MOLECULAR FORMULA: Mixture.

9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

9.5 ODOR: Sweet, aromatic.
9.6 ODOR THRESHOLD: Not determined for product; for some components: Ethyl Benzene: 2-200 ppm; Toluene: Detection: 0.16-37 ppm; Recognition: 1.9-69 ppm; Xylene: 1 ppm
9.7 BOILING POINT: > 35°C (> 95°F)
9.8 FREEZING/MELTING POINT: Not available.
9.9 RELATIVE DENSITY/SPECIFIC GRAVITY (water = 1): 0.953
9.10 VAPOR DENSITY: (air = 1): > 1
9.11 VAPOR PRESSURE: Not available.
9.12 pH: Not available.
9.13 SOLUBILITY IN WATER: Not available.
9.14 OTHER SOLUBILITIES: Not known.
9.15 EVAPORATION RATE (nBuAc = 1): Not available.
9.16 VOLATILE ORGANIC COMPOUNDS (VOC): 692 g/L
9.17 FLAMMABILITY: Flammable liquid and vapor.
9.18 FLASH POINT: 22°C (71.6°F)
9.19 AUTOIGNITION TEMPERATURE: Not determined.
9.20 FLAMMABLE LIMITS IN AIR: Not tested.
9.21 PERCENT VOLATILE BY VOLUME: Not determined.
9.22 COEFFICIENT WATER/OIL DISTRIBUTION: Not available.
9.23 VISCOSITY: Not available.
9.24 PERCENT PER VOLUME SOLIDS: Not tested.
9.25 PERCENT PER WEIGHT SOLIDS: Not tested.
9.26 HOW TO DETECT THIS SUBSTANCE (WARNING PROPERTIES): The odor of this product may act as a warning property in the event of an accidental release.

10. STABILITY and REACTIVITY

10.1 REACTIVITY: Not normally reactive. Due to the diisocyanate component, this product may react with water to produce heat; closed containers may overpressure and explode.
10.2 CHEMICAL STABILITY: Stable under normal circumstances of use and handling.
10.3 POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: This product is not expected polymerize. No hazardous reactions except as noted related to water.
10.4 CONDITIONS TO AVOID: Avoid contact with incompatible chemicals and exposure to ignition sources, prolonged heating or extreme temperatures and water, prior to product curing.
10.5 INCOMPATIBLE MATERIALS: This product is not compatible with oxidizers, strong acids, strong bases, amines, heavy metals, copper and copper alloys, alcohols and water.
10.6 HAZARDOUS DECOMPOSITION PRODUCTS:
10.6.1 Combustion: Thermal decomposition of this product can generate carbon, and nitrogen oxides, propylene glycol, hydrogen chloride, hydrogen cyanide, isocyanates, isocyanic acid.
10.6.2 Hydrolysis: May generate heat.

11. TOXICOLOGICAL INFORMATION

11.1 POTENTIAL HEALTH EFFECTS: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this product are as follows:
11.1.1 Contact with Skin: Causes skin irritation. May be harmful in contact with skin. Depending on the duration of skin contact, skin exposure can cause reddening, discomfort or irritation. The isocyanate components are a skin sensitizers. Persons who are susceptible to isocyanates may experience sensitization and allergic reactions with repeated exposure.
11.1.1 Contact with Eyes: Causes serious eye irritation. Brief contact with the liquid or vapors from this product and the eyes can cause irritation, reddening and watering. Direct contact with the liquid may cause more severe irritation.
11.1.2 Skin Absorption: Prolonged skin contact may cause adverse systemic toxicity by skin absorption as described under ingestion or inhalation.
11.1.3 Ingestion: May be harmful if swallowed. If swallowed, irritation of the mouth, throat, and other tissues of the gastro-intestinal system can occur, as well as cause nausea, vomiting, and diarrhea and adverse effects on the central nervous system. Symptoms can include dizziness, vomiting and incoordination. Ingestion of large amounts may cause systemic toxicity. May be fatal if swallowed and enters airways. Aspiration into the lungs after ingestion can pose a serious hazard of chemical and pulmonary edema. Ingestion of large amount may be fatal.
11.1.4 Inhalation: May be harmful if inhaled. May cause sensitization of the airways and allergic reaction. May cause respiratory irritation. Inhalation of vapors, fumes or aerosols of this product can moderately to can irritate the tissues of the nose, mouth, throat, and upper respiratory system. Symptoms of exposure may include coughing, sneezing, and difficulty breathing. May cause drowsiness or dizziness. Inhalation can cause adverse central nervous system effects, including dizziness, incoordination, nausea and vomiting. High aerosol concentrations could cause inflammation of the lungs (chemical pneumonitis), chemical bronchitis, severe coughing spasms and accumulation of fluid in the lungs (pulmonary edema), which could prove fatal. Symptoms of pulmonary edema may not appear until several hours after exposure and are aggravated by physical exertion. Chronic inhalation exposure to Ethyl Benzene and Toluene can cause damage to the hearing.

11.1 POTENTIAL HEALTH EFFECTS (continued):

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

11.1.6: Other Effects: In workplace studies involving solvent mixtures containing Ethyl Benzene isomers, there was a significant increase in inner ear disorders in comparison with unexposed controls. The Toluene component is known to cause ototoxicity; repeated exposure to this product may cause damage to hearing, including hearing loss, especially in the presence of high decibel noise.

11.2 DELAYED and IMMEDIATE EFFECTS and CHRONIC EFFECTS FROM SHORT-TERM and LONG-TERM EXPOSURE:

11.2.1 Short-Term: This product may be harmful by inhalation, ingestion or if absorbed via intact skin. Ingestion and inhalation can cause adverse central nervous system effects. Eye contact may cause severe irritation. Skin contact and inhalation may be irritating.

11.2.2 Long-Term: Prolonged or chronic skin contact may cause dermatitis. May cause skin sensitization. Inhalation may cause adverse effects on the auditory system.

11.3 TARGET ORGANS:

11.3.1 Short Term: Skin, eyes, respiratory system.

11.3.2 Long Term: Skin, respiratory and central nervous systems, reproductive system, auditory system/organs.

11.4 OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

11.4.1 Oral ATE: > 2600 mg/kg (0% unknown)

11.4.2 Dermal ATE: > 7200 mg/kg (30-40% unknown)

11.4.3 Inhalation Vapor ATE: > 10 mg/L (0% unknown)

11.5 ACUTE TOXICITY DATA FOR COMPONENTS: The following toxicology data are available for components greater than 1% in concentration. Due to the large amount of data, only human data, LD50 Oral-Rat or Mouse, LD50 Skin-Rat or Mouse, LC50 Inhalation-Rat or Mouse and skin irritation data are provided in this SDS. Contact Pecora for more information.

Ethyl Benzene:
LD_{50} (Oral-Rat) 3500 mg/kg
LD_{50} (Dermal-Rabbit) 17,800 mg/kg
LC_{50} (Inhalation-Mouse) 4 hours: 6.2 mg/L

Proprietary Aromatic Polyisocyanate:
LD_{50} (Oral-Rat) > 2000 mg/kg (read across data)
LC_{50} (Inhalation-Rat) 4 hours: > 8.82 mg/L (read across data)

Propylene Glycol Monomethyl Ether Acetate:
LD_{50} (Oral-Rat) > 5000 mg/kg
LD_{50} (Dermal-Rabbit) > 5000 mg/kg
LC_{50} (Inhalation-Rat) 4 hours: 108 mg/L

Toluene:
Standard Draize Test (Eye-Human) 200 ppm
TCLo (Inhalation-Human) 200 ppm: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Sense Organs and Special Senses (Eye): conjunctive irritation; Lungs, Thorax, or Respiration: other changes
Standard Draize Test (Skin-Rabbit) 100%: Moderate

Toluene (continued):
Standard Draize Test (Eye-Rabbit) 24 hours: 5 mg: Severe
LD_{50} (Oral-Rat) > 5000 mg/kg
LD_{50} (Dermal-Rabbit) > 5000 mg/kg
LC_{50} (Inhalation-Rat) 4 hours: >20 mg/L

Xylenes:
Standard Draize Test (Eye-Human) 200 ppm
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
TCLo (Inhalation-Human) 200 ppm: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Sense Organs and Special Senses (Eye): conjunctive irritation; Lungs, Thorax, or Respiration: other changes
Standard Draize Test (Skin-Rabbit) 100%: Moderate
Standard Draize Test (Eye-Rabbit) 24 hours: 5 mg: Severe
LD_{50} (Oral-Rat) 6602 mg/kg
LD_{50} (Dermal-Rabbit) 12,126 mg/kg
LC_{50} (Inhalation-Rat) 4 hours: 27.1 mg/L

11.6 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
Ethyl Benzene	2B	D	No	No	A3	No	Yes
2,4-Toluene Diisocyanate	No	NO	R	No	A#	No	No
Toluene	3	II	No	No	A4	No	No
Xylene	3	I	No	No	A4	No	No

ACGIH TLV-A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans. ACGIH TLV-A4: Not Classifiable as a Human Carcinogen. EPA-D: Not Classifiable as to Human Carcinogenicity. EPA-I: Data are Inadequate for and Assessment of Human Carcinogenic Potential. EPA-II: Inadequate Information to Assess Carcinogenic Potential. IARC-2B: Possibly Carcinogenic to Humans. IARC-3: Unclassifiable as to Carcinogenicity in Humans. NTP-R: Reasonably Anticipated to Be a Human Carcinogen

11.7.1 Additional Information on Carcinogenic Potential:

2,4-Toluene Diisocyanate: This compound has a German DFG MAK Carcinogenic rating of MAK-3A. Although this compound carries a Harmonized EU CLP Classification of Carcinogenic Cat. 2, the data indicates this hazard is derived from animal data with exposure via the oral route, which is an unlikely route of exposure in the workplace and additionally, an oral chronic exposure study with TDI is considered invalid due to mishandling of test material.

11.5 IRRITANCY OF PRODUCT: This product is irritating by all routes of exposure. Depending on concentration and duration of exposure, eye exposure may be severe.

11.10 SENSITIZATION TO THE PRODUCT: The Diisocyanate components are known human skin and respiratory sensitizers; subsequent exposure to very small amounts of the product may cause allergic reactions in susceptible individuals. Once a person is sensitized to, contact with even a small amount causes outbreaks of dermatitis with symptoms such as skin redness, itching, rash and swelling. This reaction can spread from the point of contact (usually the hands or arms) to other parts of the body. Contact allergic dermatitis can also occur from exposure to this product. Respiratory sensitization is also possible. People who develop respiratory sensitization can experience symptoms of bronchial asthma such as wheezing, difficult breathing, sneezing and runny or blocked nose following exposure to low airborne concentrations that have no effect on non-sensitized people. Cross-sensitization between different isocyanates may occur.

11. TOXICOLOGICAL INFORMATION (Continued)

11.10 SENSITIZATION TO THE PRODUCT (continued):

11.10.1 Skin Sensitization: Repeated skin contact with diisocyanates has caused skin sensitization in humans, although the condition is not common. Once a person is sensitized, contact with even a small amount 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. Cross-sensitization with other isocyanate compounds can occur.

2,4-Toluene Diisocyanate: Repeated skin contact with toluene diisocyanates has caused skin sensitization in humans, although the condition is not common. Once a person is sensitized, contact with even a small amount 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. Some people who inhaled toluene diisocyanate developed extensive skin rashes can last weeks.

11.10.2 Respiratory Sensitization: Initial symptoms of respiratory reactions from diisocyanates may appear to be a cold or mild hay fever. However, severe asthmatic symptoms can develop and include wheezing, chest tightness, shortness of breath, difficulty breathing and/or coughing. Fever, chills, general feelings of discomfort, headache, and fatigue can also occur. Symptoms may occur immediately upon exposure (within an hour), several hours after exposure or both, and/or at night. Typically, the asthma improves with removal from exposure (e.g., weekends or vacations) and returns, in some cases, in the form of an "acute attack", on renewed exposure. Sensitized people who continue to work with diisocyanates may develop symptoms sooner after each exposure. The number and severity of symptoms may increase. 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 for months or years. Exposure to isocyanates is likely to aggravate existing respiratory disease, such as chronic bronchitis, and emphysema.

11.7 TOXICOLOGICAL SYNERGISTIC PRODUCTS: There have been several studies in humans and animals on the interaction of Xylenes with drugs, alcohol and other solvents. Xylene has a high potential to interact with other compounds because it increases metabolic enzymes in the liver and decreases metabolic enzymes in the lungs. In general, exposure to related solvents, such as benzene, toluene and ethanol (alcohol) slows the rate of clearance of Xylenes from the body, thus enhancing its toxic effects.

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

11.8.1 Mutagenicity: Current data does not indicate any component presents a mutagenic hazard to persons in the workplace.

11.8.2 Embryotoxicity/Teratogenicity:

Xylene (mixed isomers) are considered fetotoxic in humans, based on observations of reduced fetal weight, delayed ossification and persistent behavioral effects in animal studies in the absence of maternal toxicity. Several human population studies have suggested a link between exposure to organic solvents (including xylene) and increased occurrence of miscarriages or birth defects in children. However, in the majority of cases, there was exposure to a variety of solvents at the same time, exposure was ill-defined, and the number of cases examined was small.

Toluene: Toluene has caused fetotoxicity (reduced fetal weight), behavioral effects (effects on learning and memory) and hearing loss (in males) have been observed in the offspring of rats exposed by inhalation to 1200 or 1800 ppm toluene. These effects were observed in the absence of maternal toxicity. Lower birth weight in the absence of significant maternal toxicity and weak evidence of behavioral effects (water maze and open field performance) was seen in offspring of dams exposed to toluene from day 7 of pregnancy until day 18 post-natally. Toluene is therefore classified as Category 2 (H361d) according to GHS.

11.8.3 Reproductive Toxicity:

Toluene: There is no evidence that toluene has any effect on fertility and does not warrant classification for reproductive toxicity based on fertility. Lower birth weight in the absence of significant maternal toxicity and weak evidence of behavioral effects (water maze and open field performance) was seen in offspring of dams exposed to toluene from day 7 of pregnancy until day 18 post-natally. Toluene is therefore classified as Category 2 (H361d) according to GHS.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

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

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

12.3 BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

12.4 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 that has data for chronic aquatic toxicity.

Ethyl Benzene:

LC_{50} (fish) 96 hours: 4.2-5.2 mg/L
EC_{50} (Daphnia) 48 hours: 1.8-2.6 mg/L
EC_{50} (Green algae) 72 hours: 1.2-2.6 mg/L

12.5 OTHER ADVERSE EFFECTS: This product is not expected to have any ozone depletion potential.

12.6 ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

12.6.1: GHS Precautionary Statements for Environmental Exposure Control: P273: Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

13.1 PREPARING WASTES FOR DISPOSAL: As supplied, this product is 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.

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

14. TRANSPORTATION INFORMATION

14.1 U.S. DEPARTMENT OF TRANSPORTATION (DOT): Per U.S. DOT regulations, under 49 CFR 172.101.

UN Identification Number:	UN 1866
Proper Shipping Name:	Resin solution, flammable
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	PG II
DOT Label(s) Required:	Class 3 (Flammable)
North American Emergency Response Guidebook Number (2020):	127

Marine Pollutant: No component is listed as a Marine Pollutant (as defined by 49 CFR 172.101.

NOTE: Shipments of this product may be shipped under small quantity and limited quantity exceptions as indicated under 49 CFR §173.4 and 49 CFR §173.150, if all requirements are met.

Small Quantity Exception (49 CFR 173.4): Small quantities of Class 3 material are not subjected to other requirements of the Hazardous Materials Regulations (Subchapter C) when the maximum quantity per inner receptacle is limited to 500 mL (0.1 oz). Refer to 49 CFR 173.4 for specific information in packaging small quantity materials.

Limited Quantity Exceptions [49 CFR 173.150(b)]: Limited quantities for Class 3, Packing Group II materials have inner packagings not over 1.0 L (0.3 gal.) net capacity each, packed in strong outer packaging.

14.2 TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS (TDG): Per regulations of Transport Canada.

UN Identification Number:	UN 1866
Proper Shipping Name:	Resin solution, flammable
Hazard Class Number and Description:	3 (Flammable)
Packing Group:	PG II
Hazard Shipping Label(s) Required:	Class 3 (Flammable)
Excepted Quantities:	E2
Special Provisions:	None
Explosive Limit & Limited Quantity Index:	5 L
ERAP Index:	None
Passenger Carrying Ship Index:	None
Passenger Carrying Road Or Rail Vehicle Index:	5 L

Marine Pollutant: No component meets the criteria of the Canadian TDG to be Marine Pollutants.

14.3 INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): Per the International Air Transport Association.

Transport Association.

UN Identification Number:	UN 1866
Proper Shipping Name:	Resin solution, flammable
Hazard Class or Division:	3 (Flammable)
Hazard Label(s) Required:	Class 3 (Flammable)
Packing Group:	II
Excepted Quantities:	E2
Passenger and Cargo Aircraft Packing Instruction:	353
Passenger and Cargo Aircraft Maximum Net Quantity per Pkg.:	1 L
Passenger and Cargo Aircraft Limited Quantity Packing Instruction:	Y341
Passenger and Cargo Aircraft Limited Quantity Maximum Net Quantity per Pkg.:	5 L
Cargo Aircraft Only Packing Instruction:	364
Cargo Aircraft Only Maximum Net Quantity per Pkg.:	60 L
Special Provisions:	A3
ERG Code:	3L

14.4 INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): Per the International Maritime Organization.

UN No.:	1866
Proper Shipping Name:	Resin solution, flammable
Hazard Class Number:	3 (Flammable)
Labels:	Class 3 (Flammable)
Packing Group:	II
Special Provisions:	None
Limited Quantities:	5 L
Excepted Quantities:	E2
Packing:	Instructions: P001; Provisions: PP1
IBCs:	Instructions: IBC02; Provisions: None
Tanks:	Instructions: T4; Provisions: TP1, TP8
EmS:	F-E, S-E
Stowage Category:	Category B.
Segregation:	None.

Marine Pollutant: No component meets the criteria of the IMO to be a Marine Pollutant.

15. REGULATORY INFORMATION

15.1 U.S. REGULATIONS:

15.1.1 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.

CHEMICAL	SECTION 302 EHS (TPQ) (40 CFR 355, Appendix A)	SECTION 304 RQ (40 CFR Table 302.4)	SECTION 313 TRI (threshold) (40 CFR 372.65)
Ethylbenzene	No	No	Yes
Proprietary Glycol Ether	No	No	Yes (in Glycol Ether Cat. N230)
2,4-Toluene Diisocyanate	Yes (100 lb (45.4 kg)	Yes	Yes (diisocyanates category)
Toluene	No	No	Yes
Xylene	No	No	Yes

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

15.1.3 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.

15.1.4 U.S. CERCLA Reportable Quantity (RQ): Ethylbenzene: 1000 lb (454 kg); 2,4-Toluene Diisocyanate:500 lb (227 kg); Toluene: 1000 lb (454 kg); Xylene: 100 lb (45.4 kg). The Proprietary Glycol Ether (under the Glycol Ether Category) is a CERCLA Hazardous Chemical, but has no designated RQ assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985).

15.1.5 U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): The Ethylbenzene, 2,4-Toluene Diisocyanate, Toluene and Xylene components are listed as a Hazardous Air Pollutants (HAPs) generally known or suspected to cause serious health problems. The Clean Air Act, as amended in 1990, directs EPA to set standards requiring major sources to sharply reduce routine emissions of toxic pollutants. EPA is required to establish and phase in specific performance-based standards for all air emission sources that emit one or more of the listed pollutants. The above compounds are included on this list.

15.1.6 U.S. Clean Water Act Requirements: Toluene and Xylenes (mixed) are designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of these substances. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing these substances.

15.1.7 California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): Ethyl Benzene and Toluene are listed on the California Proposition Lists. WARNING: This product can expose you to chemicals including Ethyl Benzene and Toluene which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to P65Warnings.ca.gov. In addition, to the warning text provided above, the following symbol must be displayed. Where the sign, label or shelf tag for the product is not printed using the color yellow, the symbol may be printed in black and white. The symbol shall be placed to the left of the text of the warning, in a size no smaller than the height of the word “WARNING.”

15.2 CANADIAN REGULATIONS:

15.2.1 Canadian DSL/NDSL Inventory Status: The components of this product are on the DSL Inventory.

15.2.2 Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Toluene is on the Priority 1 Substances List as ‘Not Toxic’. The Xylene component is on the CEPA Priority Substances 1 List, not considered as "TOXIC" under Section 64 of CEPA.

15.2.3 Canadian WHMIS (HPR-GHS) 2015 Classification and Symbols: See Section 2 in Classification and Symbols under HPR-GHS 2015.

16. OTHER INFORMATION

16.1 HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS®)

Health	**2***
Flammability	**3**
Physical Hazard	**0**

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.

16.2 REFERENCES AND DATA SOURCES: Contact the supplier for information.

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

16.4 DATE OF PREPARATION: April 29, 2025

16.5 REVISION DETAILS: New.

16.6 DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Safety Data Sheet is presented in good faith based on data believed to be accurate as of the date this 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.

DEFINITIONS OF TERMS

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

KEY ACRONYMS:

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

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

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

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

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

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

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

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

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: **0** Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation*: Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. *Eye Irritation*: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. *Oral Toxicity LD_{50} Rat*: > 5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat*: > 20 mg/L. **1** Slight Hazard: Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. *Skin Irritation*: Slightly or mildly irritating. PII or Draize > 0 < 5. *Eye Irritation*: Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. *Oral Toxicity LD_{50} Rat*: > 500–5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 1000–2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 2–20 mg/L. **2** Moderate Hazard: Temporary or transitory injury may occur; prolonged exposure may affect the CNS. *Skin Irritation*: Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. *Eye Irritation*: Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. *Oral Toxicity LD_{50} Rat*: > 50–500 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 200–1000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.5–2 mg/L. **3** Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation*: Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. *Eye Irritation*: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat*: > 1–50 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: > 20–200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.05–0.5 mg/L. **4** Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure; extremely toxic; irreversible injury may result from brief contact. *Skin Irritation*: Not appropriate. Do not rate as a 4, based on skin irritation alone. *Eye Irritation*: Not appropriate. Do not rate as a 4, based on eye irritation alone. *Oral Toxicity LD_{50} Rat*: ≤ 1 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit*: ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: **0** Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1** Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (e.g.,, OSHA Class IIIB); and Most ordinary combustible materials (e.g., wood, paper, etc.). **2** Moderate Hazard: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3** Serious Hazard: 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, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°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) (e.g., OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides).

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued):

4 Severe Hazard: Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material 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) (e.g.,, OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: **0** *Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. *Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No 0 rating. *Unstable Reactives*: Substances that will not polymerize, decompose, condense, or self-react.). **1** *Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable but can become unstable at high temperatures and pressures. These materials may react with water but will not release energy violently. *Explosives*: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating. *Oxidizers*: Packaging Group III oxidizers; Solids: any material that in either concentration tested exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.

PHYSICAL HAZARD: **0** *Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. *Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No 0 rating. *Unstable Reactives*: Substances that will not polymerize, decompose, condense, or self-react.). **1** *Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable but can become unstable at high temperatures and pressures. These materials may react with water but will not release energy violently. *Explosives*: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating. *Oxidizers*: Packaging Group III oxidizers; Solids: any material that in either concentration tested exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2** *Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *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 or oxygen at room temperature. **3** *Water Reactivity*: Materials that may form explosive reactions 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; or materials that react explosively with water. *Explosives*: Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than 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 pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion.

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): **4** *Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *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/or pressure and have a high potential (or high risk) to cause significant heat generation 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/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: **0** Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC_{50} for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 200 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD_{50} for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC_{50} for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD_{50} for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC_{50} for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. Materials whose LD_{50} for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC_{50} for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC_{50} for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD_{50} for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD_{50} for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: **0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g.,, Class II and Class IIIA liquids.) 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.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): **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) (e.g., Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., 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 10 W/mL and below 100W/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 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point: Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. Autoignition Temperature: Minimum temperature 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. LD_{50}: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC_{50}: 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/m^3: 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 body weight in kg. TDLo: Lowest dose to cause a symptom. TCLo: Lowest concentration to cause a symptom. TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo: Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE INFORMATION:

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

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLm: Median threshold limit. log K_{OW} or log K_{OC}: Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.