



## SAFETY DATA SHEET

3313045 NOVA SCOTIA COMPANY

**Product name:** Great Stuff™ Window and Door Insulating Foam Sealant

**Issue Date:** 03/11/2024

**Print Date:** 03/19/2026

3313045 NOVA SCOTIA COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

---

### 1. IDENTIFICATION

---

**Product name:** Great Stuff™ Window and Door Insulating Foam Sealant

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Polyurethane foam.

#### COMPANY IDENTIFICATION

3313045 NOVA SCOTIA COMPANY  
6925 Century Avenue, Suite 700  
MISSISSAUGA ON L5N 7K2  
CANADA

**Customer Information Number:**

833-338-7668  
SDSQuestion-NA@dupont.com

#### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** +1 800-424-9300

**Local Emergency Contact:** +1 800-424-9300

---

### 2. HAZARDS IDENTIFICATION

---

#### Hazard classification

This product is hazardous under the criteria of the Hazardous Products Regulation (HPR) as implemented under the Workplace Hazardous Materials Information System (WHMIS 2015).

Flammable aerosols - Category 2

Gases under pressure - Liquefied gas

Acute toxicity - Category 4 - Inhalation

Skin irritation - Category 2

Eye irritation - Category 2B

Skin sensitisation - Category 1

Specific target organ toxicity - single exposure - Category 3

Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

#### Label elements

**Hazard pictograms**



Signal word: **WARNING!**

#### **Hazards**

Flammable aerosol.

Contains gas under pressure; may explode if heated.

Causes skin and eye irritation.

May cause an allergic skin reaction.

Harmful if inhaled.

May cause respiratory irritation.

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

#### **Precautionary statements**

##### **Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not spray on an open flame or other ignition source.

Do not pierce or burn, even after use.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves.

##### **Response**

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Get medical advice/ attention if you feel unwell.

If skin irritation or rash occurs: Get medical advice/ attention.

If eye irritation persists: Get medical advice/ attention.

##### **Storage**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

##### **Disposal**

Dispose of contents/ container to an approved waste disposal plant.

#### **Other hazards**

No data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

| Component                                                             | CASRN      | Concentration (w/w) |
|-----------------------------------------------------------------------|------------|---------------------|
| Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer | 53862-89-8 | >= 30.0 - <= 60.0 % |
| Diphenylmethane Diisocyanate, isomers and homologues                  | 9016-87-9  | >= 10.0 - <= 30.0 % |
| Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer      | 57029-46-6 | >= 10.0 - <= 30.0 % |
| 4,4' -Methylenediphenyl diisocyanate                                  | 101-68-8   | >= 10.0 - <= 30.0 % |
| Tris(1-chloro-2-propyl) phosphate                                     | 13674-84-5 | >= 5.0 - <= 10.0 %  |
| Isobutane                                                             | 75-28-5    | >= 5.0 - <= 10.0 %  |
| Methyl ether                                                          | 115-10-6   | >= 1.0 - <= 5.0 %   |
| Propane                                                               | 74-98-6    | >= 1.0 - <= 5.0 %   |

*Note*

Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

### 4. FIRST AID MEASURES

#### Description of first aid measures

##### General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Most important symptoms and effects, both acute and delayed:**

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

---

## **5. FIREFIGHTING MEASURES**

---

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

**Unusual Fire and Explosion Hazards:** Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

---

## **6. ACCIDENTAL RELEASE MEASURES**

---

**Personal precautions, protective equipment and emergency procedures:** Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Confined space entry procedures must be followed before entering the area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Spilled material may cause a slipping hazard.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Isolate area until gas has dispersed. Ground and bond all containers and handling equipment. Use non-sparking tools in cleanup operations. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Collect in suitable and properly labeled containers. Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Sawdust. Vermiculite. See Section 10 for more specific information. See Section 13, Disposal Considerations, for additional information.

---

## **7. HANDLING AND STORAGE**

---

**Precautions for safe handling:** Do not enter confined spaces unless adequately ventilated. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. This material is hygroscopic in nature. Keep out of reach of children. Vapors

are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Contents under pressure. Do not puncture or incinerate container. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in a dry place. See Section 10 for more specific information.

**Storage stability**

**Storage temperature:** 25 °C  
**Storage Period:** 18 Month

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Consult local authorities for recommended exposure limits.

| Component                                            | Regulation                                                                                                   | Type of listing   | Value                   |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------|-------------------------|
| Diphenylmethane Diisocyanate, isomers and homologues | CA AB OEL                                                                                                    | TWA               | 0.07 mg/m3 0.005 ppm    |
|                                                      | CA BC OEL                                                                                                    | TWA               | 0.005 ppm               |
|                                                      | CA BC OEL                                                                                                    | C                 | 0.01 ppm                |
| 4,4' -Methylenediphenyl diisocyanate                 | DUPONT AEL                                                                                                   | AEL * Vapour      | 2.5 Parts per billion   |
|                                                      | DUPONT AEL                                                                                                   | AEL * Vapour      | 20 Parts per billion    |
|                                                      | DUPONT AEL                                                                                                   | AEL * particulate | 0.025 mg/m3             |
|                                                      | CA BC OEL                                                                                                    | TWA               | 0.005 ppm               |
|                                                      | Further information: S <sup>®</sup> : Substance with specific evidence of sensitization by respiratory route |                   |                         |
|                                                      | CA BC OEL                                                                                                    | C                 | 0.01 ppm                |
|                                                      | Further information: S <sup>®</sup> : Substance with specific evidence of sensitization by respiratory route |                   |                         |
|                                                      | CA ON OEL                                                                                                    | TWA               | 0.005 ppm               |
|                                                      | CA ON OEL                                                                                                    | C                 | 0.02 ppm                |
|                                                      | CA QC OEL                                                                                                    | TWAEV             | 0.051 mg/m3 0.005 ppm   |
|                                                      | Further information: S: Sensitizer                                                                           |                   |                         |
| Isobutane                                            | ACGIH                                                                                                        | STEL              | 1,000 ppm               |
|                                                      | CA AB OEL                                                                                                    | TWA               | 1,000 ppm               |
|                                                      | CA BC OEL                                                                                                    | TWA               | 1,000 ppm               |
|                                                      | CA BC OEL                                                                                                    | TWA               | 1,000 ppm               |
| Methyl ether                                         | US WEEL                                                                                                      | TWA               | 1,000 ppm               |
|                                                      | CA BC OEL                                                                                                    | TWA               | 1,000 ppm               |
| Propane                                              | ACGIH                                                                                                        |                   | See Further information |
|                                                      | Further information: See Appendix F: Minimal Oxygen Content; EX: Explosion hazard:                           |                   |                         |

|  |                                                                                                                                                                                                                                                                                           |       |                         |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------|
|  | the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit.; asphyxia: Asphyxia; D: Simple asphyxiant; see discussion covering Minimal Oxygen Content found in the 'Definitions and Notations' section following the NIC tables |       |                         |
|  | CA AB OEL                                                                                                                                                                                                                                                                                 | TWA   | 1,000 ppm               |
|  | CA QC OEL                                                                                                                                                                                                                                                                                 | TWAEV | 1,800 mg/m3 1,000 ppm   |
|  | CA BC OEL                                                                                                                                                                                                                                                                                 |       | See Further information |
|  | Further information: Simple asphyxiant: Simple asphyxiant                                                                                                                                                                                                                                 |       |                         |

This material contains a simple asphyxiant which may displace oxygen. Insure adequate ventilation to prevent an oxygen deficient atmosphere.

The minimum requirement of 19.5% oxygen at sea level (148 torr O<sub>2</sub>, dry air) provides an adequate amount of oxygen for most work assignments.

### Exposure controls

**Engineering measures:** Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields).

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Viton. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

|                                        |                                                   |
|----------------------------------------|---------------------------------------------------|
| <b>Appearance</b>                      |                                                   |
| Physical state                         | Foam                                              |
| Color                                  | Yellow                                            |
| Odor                                   | Musty                                             |
| Odor Threshold                         | No test data available                            |
| pH                                     | Not applicable                                    |
| Melting point/range                    | No test data available                            |
| Freezing point                         | No test data available                            |
| Boiling point (760 mmHg)               | Not applicable                                    |
| Flash point                            | <b>closed cup</b> -104 °C <i>Estimated.</i>       |
| Evaporation Rate (Butyl Acetate = 1)   | No test data available                            |
| Flammability (solid, gas)              | Not expected to form explosive dust-air mixtures. |
| Lower explosion limit                  | Not applicable                                    |
| Upper explosion limit                  | Not applicable                                    |
| Vapor Pressure                         | 1,151 kPa at 55 °C <i>Estimated.</i>              |
| Relative Vapor Density (air = 1)       | No test data available                            |
| Relative Density (water = 1)           | 1.06 <i>Estimated.</i>                            |
| Water solubility                       | insoluble                                         |
| Partition coefficient: n-octanol/water | Reacts with water.                                |
| Auto-ignition temperature              | No test data available                            |
| Decomposition temperature              | No test data available                            |
| Kinematic Viscosity                    | Not applicable                                    |
| Explosive properties                   | Not explosive                                     |
| Oxidizing properties                   | No                                                |
| Molecular weight                       | No data available                                 |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

---

## 10. STABILITY AND REACTIVITY

---

**Reactivity:** No data available

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.  
Unstable at elevated temperatures.

**Possibility of hazardous reactions:** Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Acids.

**Conditions to avoid:** Avoid temperatures above 50 °C  
Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

**Incompatible materials:** Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

---

## **11. TOXICOLOGICAL INFORMATION**

---

*Toxicological information appears in this section when such data is available.*

### **Acute toxicity**

#### **Acute oral toxicity**

Product test data not available. Refer to component data.

#### **Acute dermal toxicity**

Product test data not available. Refer to component data.

#### **Acute inhalation toxicity**

Product test data not available. Refer to component data.

### **Skin corrosion/irritation**

Prolonged contact may cause moderate skin irritation with local redness.  
Material may stick to skin causing irritation upon removal.  
May stain skin.

### **Serious eye damage/eye irritation**

May cause moderate eye irritation.  
May cause slight temporary corneal injury.

### **Sensitization**

Product test data not available. Refer to component data.

### **Specific Target Organ Systemic Toxicity (Single Exposure)**

Product test data not available. Refer to component data.

### **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Product test data not available. Refer to component data.

**Carcinogenicity**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Teratogenicity**

Product test data not available. Refer to component data.

**Reproductive toxicity**

Product test data not available. Refer to component data.

**Mutagenicity**

Product test data not available. Refer to component data.

**Aspiration Hazard**

Product test data not available. Refer to component data.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

**Acute oral toxicity**

Typical for this family of materials. Observations in animals include: Gastrointestinal irritation. LD50, Rat, > 2,000 mg/kg. No deaths occurred at this concentration.

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rabbit, > 9,400 mg/kg

**Acute inhalation toxicity**

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

The LC50 has not been determined.

**Sensitization**

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Teratogenicity**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Reproductive toxicity**

No specific, relevant data available for assessment.

**Mutagenicity**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Diphenylmethane Diisocyanate, isomers and homologues**

**Acute oral toxicity**

Typical for this family of materials. LD50, Rat, > 10,000 mg/kg

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rabbit, > 9,400 mg/kg

**Acute inhalation toxicity**

LC50, Rat, 4 Hour, dust/mist, 0.49 mg/l

For similar material(s): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8). LC50, Rat, 1 Hour, Aerosol, 2.24 mg/l

For similar material(s): 2,4'-Diphenylmethane diisocyanate (CAS 5873-54-1). LC50, Rat, 4 Hour, Aerosol, 0.387 mg/l

**Sensitization**

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Teratogenicity**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer**

**Acute oral toxicity**

Typical for this family of materials. LD50, Rat, > 2,000 mg/kg Estimated. No deaths occurred at this concentration.

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rabbit, > 2,000 mg/kg Estimated.

**Acute inhalation toxicity**

The LC50 has not been determined.

**Sensitization**

For this family of materials, sensitization studies done in guinea pigs have been negative.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

No relevant data found.

**Teratogenicity**

No relevant data found.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

One material tested in this family was negative in the Ames test.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**4,4' -Methylenediphenyl diisocyanate**

**Acute oral toxicity**

LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute dermal toxicity**

LD50, Rabbit, > 9,400 mg/kg

**Acute inhalation toxicity**

LC50, Rat, 1 Hour, dust/mist, 2.24 mg/l

**Sensitization**

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Teratogenicity**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Tris(1-chloro-2-propyl) phosphate**

**Acute oral toxicity**

LD50, Rat, male and female, >1,000 mg/kg

**Acute dermal toxicity**

LD50, Rabbit, > 5,000 mg/kg

**Acute inhalation toxicity**

No deaths occurred at this concentration. LC50, Rat, 4 Hour, dust/mist, > 7 mg/l

**Sensitization**

Did not cause allergic skin reactions when tested in humans.

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No data available.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Teratogenicity**

Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

**Isobutane**

**Acute oral toxicity**

Single dose oral LD50 has not been determined.

**Acute dermal toxicity**

The dermal LD50 has not been determined.

**Acute inhalation toxicity**

LC50, Mouse, 4 Hour, gas, 260200 ppm

**Sensitization**

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause drowsiness or dizziness.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Teratogenicity**

No relevant data found.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

In vitro genetic toxicity studies were negative.

**Aspiration Hazard**

Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

**Methyl ether**

**Acute oral toxicity**

Single dose oral LD50 has not been determined.

**Acute dermal toxicity**

The dermal LD50 has not been determined.

**Acute inhalation toxicity**

LC50, Rat, 4 Hour, gas, 164000 ppm

**Sensitization**

No relevant information found.

For respiratory sensitization:

No relevant information found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In animals, effects have been reported on the following organs:

Kidney.

Liver.

**Teratogenicity**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Propane**

**Acute oral toxicity**

Single dose oral LD50 has not been determined.

**Acute dermal toxicity**

The dermal LD50 has not been determined.

**Acute inhalation toxicity**

LC50, Rat, male and female, 4 Hour, vapour, > 425000 ppm

**Sensitization**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Teratogenicity**

Screening studies suggest that this material does not affect fetal development.

**Reproductive toxicity**

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

**Mutagenicity**

In vitro genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

---

## 12. ECOLOGICAL INFORMATION

---

*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

**Diphenylmethane Diisocyanate, isomers and homologues**

**Acute toxicity to fish**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Based on information for a similar material:

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

Based on information for a similar material:

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

Based on information for a similar material:

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

Based on information for a similar material:

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

**Toxicity to soil-dwelling organisms**

EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

**Toxicity to terrestrial plants**

EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l

EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

**Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer**

**Acute toxicity to fish**

For this family of materials:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**4,4' -Methylenediphenyl diisocyanate**

**Acute toxicity to fish**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Based on information for a similar material:

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

Based on information for a similar material:

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

Based on information for a similar material:

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

Based on information for a similar material:

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

**Toxicity to soil-dwelling organisms**

EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

**Toxicity to terrestrial plants**

EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l

EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

**Tris(1-chloro-2-propyl) phosphate**

**Acute toxicity to fish**

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 84 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, 131 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Growth rate inhibition, 82 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

EC50, activated sludge, Respiration inhibition, 3 Hour, 784 mg/l, OECD 209 Test

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 32 mg/l

**Isobutane**

**Acute toxicity to fish**

No relevant data found.

**Methyl ether**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Poecilia reticulata (guppy), semi-static test, 96 Hour, > 4,000 mg/l

**Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), 48 Hour, > 4,000 mg/l, OECD Test Guideline 202 or Equivalent

**Propane**

**Acute toxicity to fish**

No relevant data found.

**Persistence and degradability**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

**Biodegradability:** Expected to degrade slowly in the environment.

**Diphenylmethane Diisocyanate, isomers and homologues**

**Biodegradability:** In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

10-day Window: Not applicable

**Biodegradation:** 0 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 302C or Equivalent

**Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer**

**Biodegradability:** For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

**4,4' -Methylenediphenyl diisocyanate**

**Biodegradability:** In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

10-day Window: Not applicable

**Biodegradation:** 0 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 302C or Equivalent

**Tris(1-chloro-2-propyl) phosphate**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Fail

**Biodegradation:** 14 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301E or Equivalent

10-day Window: Not applicable

**Biodegradation:** 95 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 302A or Equivalent

**Theoretical Oxygen Demand:** 1.17 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 0.24 d

**Method:** Estimated.

**Isobutane**

**Biodegradability:** Biodegradation may occur under aerobic conditions (in the presence of oxygen).

**Theoretical Oxygen Demand:** 3.58 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 4.4 d  
**Method:** Estimated.

**Methyl ether**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

**Biodegradation:** 5 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301A or Equivalent

**Theoretical Oxygen Demand:** 2.08 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 6.4 d

**Method:** Estimated.

**Propane**

**Biodegradability:** No relevant data found.

**Theoretical Oxygen Demand:** 3.64 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 8.4 d

**Method:** Estimated.

**Bioaccumulative potential**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

**Bioaccumulation:** In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Diphenylmethane Diisocyanate, isomers and homologues**

**Bioaccumulation:** Bioconcentration potential is low ( $BCF < 100$  or  $\log Pow < 3$ ). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Bioconcentration factor (BCF):** 92 Cyprinus carpio (Carp) 28 d

**Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer**

**Bioaccumulation:** No relevant data found.

**4,4' -Methylenediphenyl diisocyanate**

**Bioaccumulation:** Bioconcentration potential is low ( $BCF < 100$  or  $\log Pow < 3$ ).

**Partition coefficient: n-octanol/water(log Pow):** 4.51 at 22 °C

**Bioconcentration factor (BCF):** 92 Cyprinus carpio (Carp) 28 d

**Tris(1-chloro-2-propyl) phosphate**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** 2.59 Measured  
**Bioconcentration factor (BCF):** 0.8 - 4.6 Cyprinus carpio (Carp) 42 d Measured

**Isobutane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** 2.76 Measured

**Methyl ether**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** 0.10 Measured

**Propane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** 2.36 Measured

**Mobility in soil**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Diphenylmethane Diisocyanate, isomers and homologues**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer**

No relevant data found.

**Tris(1-chloro-2-propyl) phosphate**

Potential for mobility in soil is slight (Koc between 2000 and 5000).  
**Partition coefficient (Koc):** 1300 Estimated.

**Isobutane**

Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient (Koc):** 35 Estimated.

**Methyl ether**

Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient (Koc):** 1.29 - 14 Estimated.

**Propane**

Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient (Koc):** 24 - 460 Estimated.

---

## **13. DISPOSAL CONSIDERATIONS**

---

**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local

laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

---

## **14. TRANSPORT INFORMATION**

---

### **TDG**

|                             |          |
|-----------------------------|----------|
| <b>Proper shipping name</b> | AEROSOLS |
| <b>UN number</b>            | UN 1950  |
| <b>Class</b>                | 2.1      |
| <b>Packing group</b>        |          |

### **Classification for SEA transport (IMO-IMDG):**

|                                                                                             |                                                        |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Proper shipping name</b>                                                                 | AEROSOLS                                               |
| <b>UN number</b>                                                                            | UN 1950                                                |
| <b>Class</b>                                                                                | 2.1                                                    |
| <b>Packing group</b>                                                                        |                                                        |
| <b>Marine pollutant</b>                                                                     | No                                                     |
| <b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b> | Consult IMO regulations before transporting ocean bulk |

### **Classification for AIR transport (IATA/ICAO):**

|                             |                     |
|-----------------------------|---------------------|
| <b>Proper shipping name</b> | Aerosols, flammable |
| <b>UN number</b>            | UN 1950             |
| <b>Class</b>                | 2.1                 |
| <b>Packing group</b>        |                     |

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

---

## **15. REGULATORY INFORMATION**

---

Does not contain HFC.

**Canadian Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

---

## 16. OTHER INFORMATION

---

**Revision**

Identification Number: 175437 / A798 / Issue Date: 03/11/2024 / Version: 10.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

|            |                                                                                                                                         |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| ACGIH      | USA. ACGIH Threshold Limit Values (TLV)                                                                                                 |
| AEL *      | 8 & 12 hr. TWA                                                                                                                          |
| C          | ceiling limit                                                                                                                           |
| CA AB OEL  | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)                                                                     |
| CA BC OEL  | Canada. British Columbia OEL                                                                                                            |
| CA ON OEL  | Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.                                        |
| CA QC OEL  | Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |
| DUPONT AEL | DuPont AEL (Acceptable Exposure Limit)                                                                                                  |
| STEL       | Short-term exposure limit                                                                                                               |
| TWA        | 8-hr TWA                                                                                                                                |
| TWAEV      | Time-weighted average exposure value                                                                                                    |
| US WEEL    | USA. Workplace Environmental Exposure Levels (WEEL)                                                                                     |

**Full text of other abbreviations**

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National

Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

#### **Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

3313045 NOVA SCOTIA COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

CA