

## Section 1. Product and Company Identification

Product Name                                   **PRECIDIUM™ P-180D PRIMER ISO**

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## Section 2. Hazards Identification

### 2.1 GHS Classification:

|  |    |
|--|----|
| Acute Toxicity- Inhalation                       | 4  |
| Specific Target Organ Toxicity Repeated Exposure | 2  |
| Eye Irritation                                   | 2A |
| Specific Target Organ Toxicity Single Exposure   | 3  |
| Skin Irritation                                  | 2B |
| Respiratory Sensitization                        | 1  |
| Skin Sensitization                               | 1  |

### 2.2 Label Elements:



### Signal Words: **Danger**

|             |  |
|-------------|--|
| <b>H332</b> | Harmful if inhaled.  |
| <b>H373</b> | May cause damage to organs through prolonged or repeated exposure by inhalation. |
| <b>H319</b> | Causes serious eye irritation.   |
| <b>H335</b> | May cause respiratory irritation.  |
| <b>H315</b> | Causes skin irritation.  |
| <b>H334</b> | May cause allergy or asthma symptoms or breathing difficulties if inhaled.       |
| <b>H317</b> | May cause an allergic skin reaction.   |

### Precautionary Statements:

#### Prevention

|             |  |
|-------------|--|
| <b>P260</b> | Do not breathe dust/fume/gas/mist/vapours/spray. |
| <b>P264</b> | Wash exposed skin thoroughly after handling.     |
| <b>P271</b> | Use only outdoors or in a well-ventilated area.  |

**P272** Contaminated work clothing should not be allowed out of the workplace.  
**P280** Wear protective gloves/protective clothing/ eye protection/face protection.  
**P284** In case of inadequate ventilation, wear respiratory protection.

**Response**

**P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
**P312** Call a POISON CENTER/doctor if you feel unwell.  
**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+P313** If eye irritation persists: Get medical attention.  
**P302+P352** IF ON SKIN: Wash with plenty of soap and water.  
**P333+P313** If skin irritation or rash occurs: Get medical advice/attention.  
**P362+P364** Take off contaminated clothing and wash it before reuse.

**Storage:**

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

**Disposal:**

**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

**2.3 Other Hazards**

Toxic fumes may be released in fire situations. Can decompose at high temperatures forming toxic gases. Closed Containers may develop pressure and rupture on prolonged exposure to heat or if contaminated with water.

USA: This material is considered a hazardous chemical by OSHA Hazard Communication Standard (29 CFR 1910.1200) (2012)

Canada: This is a controlled product under WHMIS

## Section 3. Composition and Ingredient Information

| <u>Common Name</u>                    | <u>Chemical Name</u>                   | <u>CAS No.</u> | <u>WT%</u> |
|---------------------------------------|--|----------------|------------|
| Polymeric MDI                         | Polymethylene polyphenylene isocyanate | 9016-87-9      | 30 - 60    |
| Methylene diphenyl Diisocyanate (MDI) | 4,4'-methylenediphenyl diisocyanate    | 101-68-8       | 30 – 60    |
| Propylene Carbonate                   |  | 108-32-7       | 15-40      |

**Note:** Concentration ranges are given to protect intellectual property.

## Section 4. First Aid Measures

### 4.1 Description of First Aid Measures:

**Precautions:** First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves if necessary. Take proper precautions to ensure your own safety before attempting rescue. (eg. Wear appropriate protective equipment)

**Inhalation:** If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If exposed or concerned: Get medical advice attention.

If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped CPR immediately. Immediately obtain medical attention and transport victim to an emergency care facility.

**Eye Contact:** Gently blot or brush away excess chemical quickly. If product is liquid: Immediately flush the contaminated eyes with lukewarm gently flowing water for at least 5 minutes, or until the chemical is removed, while holding eyelids open. If irritation persists repeat flushing. Obtain medical attention immediately.

**Skin Contact:** As quickly as possible, remove contaminated clothing, shoes and leather goods (eg. Watchbands, belts). Quickly and gently blot or brush away excess chemical. Immediately wash with lukewarm water and non abrasive soap for 15 -20 minutes. Completely decontaminate clothing before reuse or discard. If skin irritation or rash occurs: Get medical advice/attention.

**Ingestion:** If swallowed, call a Poison Center or Doctor. Never give anything by mouth if victim is unconscious, losing consciousness, or convulsing. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Quickly transport victim to emergency care facility.

#### 4.2 Most important symptoms and effects, both acute and delayed:

**Inhalation:** Respiratory tract irritation and mucous membrane irritation. Symptoms include eye and nose irritation, dry or sore throat, runny nose, shortness of breath, wheezing and laryngitis. Coughing and chest pain or tightness may also occur, frequently at night. These symptoms may occur during exposure or may be delayed several hours. Exposure to isocyanates can cause difficulty breathing or asthmatic reaction.

**Eye Contact:** Irritation of the eye tissue.

**Skin Contact:** Tingling, irritation or redness of skin.

**Ingestion:** Irritation of the tissues of the mouth, throat and digestive tract. Other symptoms include headache, shortness of breath, nausea, vomiting, weakness, burning sensation in the mouth, abdominal pain and vomiting. Onset of symptoms may be delayed.

**Get immediate medical advice/attention if allergy symptoms develop.**

## Section 5. Fire Fighting Measures

**Flammable Properties:** This material can burn if heated. FlashPoint = 220°C.

**Extinguishing Media:** CO<sub>2</sub>, dry chemical, foam, water spray.

**Unsuitable Extinguishing Media:** Exercise caution when using water, water contamination of product will generate CO<sub>2</sub> gas.

#### Explosion Data:

Sensitivity to Mechanical Impact: Not applicable.

Sensitivity to Static Discharge: Not available.

#### Specific Hazards Arising From the Chemical:

During a fire products of combustion may include carbon monoxide, carbon dioxide, hydrogen cyanide, nitrogen oxides, dense smoke and irritating or toxic fumes. Reacts vigorously with water above 50°C. Closed containers may rupture violently when heated. Polymeric MDI decomposes rapidly above 204°C.

**Protective Equipment and Precautions for Firefighters:**

Firefighters should wear full protective gear including self-contained breathing apparatus. When using water, care must be taken since the reaction between water and hot polymeric MDI can be vigorous.

**Section 6. Accidental Release Measures**

**Personal Precautions:** Wear adequate PPE as indicated in section 8. Isolate spill area, preventing entry by unauthorized persons. Ventilate area of spill. Extinguish or remove all ignition sources. Spilled product presents a slipping hazard.

**Environmental Precautions:** Prevent the material from entering sewers, drainage systems, groundwater and surface water.

**Methods of Containment:** Immediately shut off leak if it is safe to do so. Contain the spill with earth, sand, or sawdust or suitable absorbent. If control of isocyanate vapour is required, cover the spilled material with protein foam. Shovel into open top drums or plastic bags for further decontamination. Do not seal drums or containers.

**Methods for Cleanup:** Wash area with decontamination solution of 0.2-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water. (5-10% sodium carbonate may be substituted for the ammonium hydroxide) Allow material to stand for 48 hours to let carbon dioxide gas escape.

**Section 7. Handling and Storage**

**Handling:** Do not breathe fumes, vapours or spray mist from this material. Avoid contact with skin and eyes. Provide adequate ventilation in the workplace. Immediately report leaks, spills or ventilation failures. Do not use with incompatible materials such as alcohols, acids, metal compounds, surfactants and water which may react vigorously.

**Storage:** Store in a dry well-ventilated area, out of direct sunlight and away from heat, ignition sources and incompatible materials. Ideal storage temperature is 16-38°C (60-100°F). Keep contents away from moisture, hazardous build-up of pressure could result if moisture contaminated containers are resealed. Store product in its original container.

**Section 8. Exposure Controls and Personal Protection**

| Hazardous Ingredients              | ACGHI TLV       | C.A.S. #  | US OSHA PEL     | Alberta (Canada) TWA                |
|------------------------------------|-----------------|-----------|-----------------|-------------------------------------|
| Polymeric MDI                      | Not Established | 9016-87-9 | Not Established | 0.005 ppm<br>0.07 mg/m <sup>3</sup> |
| Methyl diphenyl Diisocyanate (MDI) | 0.005 ppm       | 101-68-8  | 0.02 PPM        | 0.005 PPM                           |

NOTE: The occupational exposure limits listed for isocyanates do not apply to previously sensitized individuals.

No exposure limits have been set for the component designated as proprietary.

**Protective equipment**

**Eye** Safety spectacles. If there is a potential for splashing, use a full face shield.

**Respiratory** Use a NIOSH-approved respirator with organic vapour cartridges. A positive pressure air-supplied respirator equipped with a full face piece, or an air-supplied hood can also be used.

|                          |   |
|--------------------------|---|
| Gloves                   | Neoprene, nitrile-butadiene rubber, butyl rubber. Thin disposable gloves should be avoided for repeated or long term use.   |
| Clothing                 | Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.   |
| Other/Type               | Eyewash fountain. Emergency shower should be in close proximity.  |
| Ventilation Requirements | Use local exhaust ventilation to keep airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For general guidance on engineering control measures, refer to the ACGIH publication "Industrial Ventilation." |
| Engineering Controls:    | Conditions of use, adequacy of engineering or other control measures and actual exposures will dictate the need for specific protective devices at your workplace.  |

## Section 9. Physical and Chemical Properties

|                                       |  |
|---------------------------------------|--|
| Physical State                        | Liquid.  |
| Odor and Appearance                   | Pale yellow liquid, slightly musty odor.                     |
| Specific Gravity (H <sub>2</sub> O=1) | 1.19 (at 25°C).  |
| Odor Threshold(ppm)                   | 0.4 mg/M <sup>3</sup> (4,4' - Diphenylmethane Diisocyanate). |
| Vapor Pressure (mm Hg)                | approx. 4 X 10 <sup>-6</sup>                                 |
| Vapor Density (Air=1)                 | approx. 8.5.   |
| Evaporation Rate                      | Not available.   |
| Boiling Point                         | Not available.   |
| pH                                    | Not applicable.  |
| Solubility in Water                   | Reacts with water.   |
| Coefficient of Water/Oil              | Not available.   |
| Distribution                          | Not applicable.  |
| Freezing Point (°C)                   | Not available.   |
| Melting Point (°C)                    | Not applicable.  |

## Section 10. Stability and Reactivity

|                                     |   |
|-------------------------------------|---|
| Stable                              | Stable at room temperature.   |
| Incompatibility                     | This product will react with any materials containing active hydrogens such as water, alcohol, amines, bases and acids. The reaction with water is very slow under 50°C (122° F) but is accelerated at higher temperatures. |
| Reactivity Conditions               | N/A.  |
| Hazardous Products of Decomposition | Highly unlikely under normal industrial use.  |
| Polymerization                      | Polymerization may occur at elevated temperatures in the presence of alkalis, tertiary amines, and metal compounds.   |
| Conditions to Avoid:                | Avoid high temperatures. Avoid freezing.  |

## Section 11. Toxicological Information

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|--|---|
| Polymeric MDI                          | Oral LD50 (rat) >5000mg/kg.<br>Dermal LD50 (rabbit) >5000mg/kg.<br>Inhalation LC50 (rat) = 490mg/M <sup>3</sup> (4 hours exposure to respirable aerosols).  |
| Potential Health Effects<br>Inhalation | This product is a respiratory irritant and potential sensitizer. Inhalation of vapour or aerosol at levels above the occupational exposure level could cause respiratory sensitization and lung injury. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing and/or flu-like symptoms. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyperactive response to even minimal concentrations of MDI may develop in sensitized persons. In a single evaluation of 5 men occupationally exposed to MDI and hydrocarbon vapour under |

conditions where adequate ventilation or other safety precautions were not used, neuropsychologic findings were attributed to MDI.

|                                 |   |
|---------------------------------|---|
| Skin Contact                    | Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization. There is limited evidence from animal studies that skin contact may play a role in respiratory sensitization. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.  |
| Eye Contact                     | The aerosol, vapour or liquid will irritate human eyes following contact.   |
| Ingestion                       | Ingestion may cause irritation of the gastrointestinal tract. Based on the acute oral LD50, this product is considered practically non-toxic by ingestion.  |
| Chronic Effects                 | <p>A study was conducted where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosols at concentrations of 0, 0.2, 1 or 6 mg/M3. No adverse effects were observed at 0.2 mg/M3. At the 1 mg/M3 concentration, minimal nasal and lung irritant effects were seen. Only at the top concentration (6.0 mg/M3) was there an increased incidence of a benign tumor of the lung (adenoma). One malignant pulmonary tumor (adenocarcinoma) was seen in the 6.0 mg/M3 group. MDI administration to rats in this study did not change the distribution and incidence of tumors from those seen in control animals. The increase incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur.</p> <p>There are reports that excessive chronic exposure to diisocyanates may result in permanent decrease in lung function.</p> |
| Carcinogenicity                 | The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA, and not listed as carcinogens by NTP.  |
| Mutagenicity                    | There is no substantial evidence of mutagenic potential.  |
| Reproductive Effects            | No adverse reproductive effects are anticipated.  |
| Teratogenicity and Fetotoxicity | No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were maternally toxic. The doses used in these studies were maximal, respirable concentrations well in excess of the defined occupational limits.  |

## Section 12. Ecological Information

|                                     |  |
|-------------------------------------|--|
| <b>Ecotoxicity</b>                  | Polymeric MDI – LC <sub>50</sub> Zebra Fish > 1000 mg/L<br>EC <sub>50</sub> Daphnia Magna (24 hour) > 1000 mg/L<br>EC <sub>50</sub> E. Coli > 100 mg/L |
| <b>Persistence/Degradability</b>    | Product not readily biodegradable.   |
| <b>Bioaccumulation/Accumulation</b> | Not available.   |
| <b>Mobility</b>                     | Not available.   |

## Section 13. Disposal Considerations

|                       |   |
|-----------------------|---|
| Waste Disposal Method | Do not dump in any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7. Handling and Storage.  |
| Canada                | Dispose of in accordance with local, provincial and federal laws and regulations.   |
| USA                   | Dispose of in accordance with local, state and federal laws and regulations.  |
| EC                    | Waste must be disposed of in accordance with relevant EC Directives and National regional and local environmental control regulations. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. |

## Section 14. Transport Information

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|---|--|
| <b>Canadian Transportation of Dangerous Goods (TDG)</b> | Not regulated.   |
| <b>U.S. Hazardous Materials Regulation (DOT 49 CFR)</b> | Not regulated except when shipped in bulk. Bulk containers > 5000 lb's must be transported as Environmentally Hazardous Substances, liquid N.O.S (methylene Diphenyl Diisocyanate), Class 9, UN3082, PG III, RQ. |
| ADR/RID   | Not regulated.   |
| IMO Classification                                      | Not regulated.   |
| ICAO/IATA Classification                                | Not regulated.   |

## Section 15. Regulatory Information

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|---|---|
| WHMIS Classification  | D1A: Immediate and Serious Toxic Effects.<br>D2A: Material Causing Other Toxic Effects (due to respiratory sensitization).<br>D2B: Toxic Material Causing Other Toxic Effects.  |
| OSHA Classification<br>Physical<br>Health   | Not regulated.<br>Highly toxic, respiratory sensitizer, skin sensitizer, irritant; target organ: respiratory tract. Skin.   |
| TSCA (Toxic Substances Control Act) Regulations<br>EPCRA Section 313 (40 CFR 372)<br>CERCLA (Comprehensive Environmental Response, Compensation and Liability Act): | This product contains the following chemical(s) subject to reporting requirements: 100% Diisocyanate compounds (Category Code N120).<br>4,4'-Methylene diphenyl diisocyanate (CAS 101-68-8) has 5,000 lb. RQ (reportable quantity). Any spill or release above the RQ must be reported to the National Response Center (800-424-8802). The % of 4,4'-MDI in this product is listed in this SDS. This product does not contain nor is it manufactured with ozone depleting substances. |
| Other Regulations Which Might Apply to This Product   | Massachusetts Right-to-Know, Pennsylvania Right-to-Know, New Jersey Right-to-Know, CERCLA   |

## Section 16. Other Information

|                |   |
|----------------|---|
| Revision Date: | June 7, 2018  |
| Note           | This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Quantum Technical Services Limited. The data on this sheet relates only to the specific material designated herein. Quantum Technical Services Ltd. assumes no legal responsibility for use or reliance upon this data. |