1. Product and company identification

Product name: PR 1570 AMBER Part A
Code: PR 1570 AMBER Part A
Supplier: PPG Aerospace PRC-DeSoto
12780 San Fernando Road
Sylmar, CA 91342
Phone: 818 362 6711

Emergency telephone number: (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

2. Hazards identification

Emergency overview: CAUTION!
MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
MAY CAUSE EYE AND SKIN IRRITATION.

Do not swallow. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects
Inhalation: May be harmful if inhaled.
Ingestion: May be harmful if swallowed.
Skin: Harmful in contact with skin. Moderately irritating to the skin.
Eyes: Moderately irritating to eyes.

Over-exposure signs/symptoms
Inhalation: No specific data.
Ingestion: No specific data.
Skin: Adverse symptoms may include the following:
irritation
redness

Eyes: Adverse symptoms may include the following:
irritation
watering
redness

Medical conditions aggravated by over-exposure: None known.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).
See toxicological information (Section 11)
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Castor oil</td>
<td>8001-79-4</td>
<td>30 - 60</td>
</tr>
<tr>
<td>2-ethylhexane-1,3-diol</td>
<td>94-96-2</td>
<td>15 - 40</td>
</tr>
<tr>
<td>Propane-1,2-diol, propoxylated</td>
<td>2532-69-4</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Butane-1,4-diol</td>
<td>110-63-4</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

**Eye contact**
- Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

**Skin contact**
- Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

**Inhalation**
- Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

**Ingestion**
- If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

**Notes to physician**
- No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

**Flammability of the product**
- In a fire or if heated, a pressure increase will occur and the container may burst.

**Extinguishing media**
- Use an extinguishing agent suitable for the surrounding fire.
- None known.

**Special exposure hazards**
- Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Hazardous combustion products**
- Decomposition products may include the following materials: carbon oxides

**Special protective equipment for fire-fighters**
- Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

**Personal precautions**
- No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**
- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
6. Accidental release measures

Large spill:
Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill:
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling:
Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage:
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Recommended monitoring procedures:
If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures:
No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures:
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection:

Eyes:
Safety glasses with side shields.

Hands:
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Respiratory:
If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
8. Exposure controls/personal protection

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: 121.11°C (250°F)</td>
</tr>
<tr>
<td>Material supports combustion</td>
<td>Yes</td>
</tr>
<tr>
<td>Color</td>
<td>Amber</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>200 to 312.78°C (392 to 595°F)</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.98</td>
</tr>
<tr>
<td>Density (lbs / gal)</td>
<td>8.18</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>VOC</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Stability: Stable under recommended storage and handling conditions (see Section 7).

Conditions to avoid: No specific data.

Materials to avoid: Reactive or incompatible with the following materials; oxidizing materials, strong acids, strong alkalis.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-ethylhexane-1,3-diol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1400 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Propane-1,2-diol, propoxylated butane-1,4-diol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rat</td>
<td>3.8 g/m3</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2.41 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1525 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Chronic toxicity

Conclusion/Summary: Not available.
12. Ecological information

Environmental effects: No known significant effects or critical hazards.

Aquatic ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane-1,2-diol, propoxylated</td>
<td>Acute LC50 1700000 ug/L Fresh water</td>
<td>Fish - Bluegill - Lepomis macrochirus</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

<table>
<thead>
<tr>
<th>Regulation</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DOT</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG*: Packing group

Reportable quantity RQ: CERCLA: Hazardous substances.: No products were found.

15. Regulatory information

United States inventory (TSCA 8b): All components are listed or exempted.
Australia inventory (AICS): All components are listed or exempted.
Canada inventory (DSL): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
European inventory (REACH): Please contact your supplier for information on the inventory status of this material.

Japan inventory (ENCS): All components are listed or exempted.
Korea inventory (KECI): All components are listed or exempted.
New Zealand (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

United States

SARA 302/304: No products were found.
CERCLA: Hazardous substances.: No products were found.

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS #</th>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Reactive</th>
<th>Pressure</th>
</tr>
</thead>
</table>

United States - Canada - Mexico
15 . Regulatory information

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Y</th>
<th>N</th>
<th>N</th>
<th>N</th>
<th>N</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethylhexane-1,3-diol</td>
<td>94-96-2</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Propane-1,2-diol, propoxylated</td>
<td>25322-69-4</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Product as-supplied : Y  N  N  N  N  N

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 1  Health : 3  Reactivity : 0

16 . Other information

Hazardous Material Information System (U.S.A.)
Health : 3  Flammability : 1  Physical hazards : 0

( * ) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)
Health : 3  Flammability : 1  Instability : 0

Date of previous issue : 6/18/2012.

Organization that prepared the MSDS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.
Material Safety Data Sheet

Date of issue: 19 October 2013
Version: 5

1. Product and company identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>PR 1570 AMBER Part B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>PR 1570 AMBER Part B</td>
</tr>
<tr>
<td>Supplier</td>
<td>PPG Aerospace PRC-DeSoto</td>
</tr>
<tr>
<td></td>
<td>12780 San Fernando Road</td>
</tr>
<tr>
<td></td>
<td>Sylmar, CA 91342</td>
</tr>
<tr>
<td></td>
<td>Phone: 818 362 6711</td>
</tr>
<tr>
<td>Emergency telephone</td>
<td>(412) 434-4515 (U.S.)</td>
</tr>
<tr>
<td>number</td>
<td>(514) 645-1320 (Canada)</td>
</tr>
<tr>
<td></td>
<td>01-800-00-21-400 (Mexico)</td>
</tr>
</tbody>
</table>

2. Hazards identification

Emergency overview: WARNING!

COMBUSTIBLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. SKIN CONTACT TO ISOCYANATE MONOMER MAY LEAD TO ALLERGIC LUNG REACTION. MAY BE HARMFUL IF INHALED OR SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. SUSPECT CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER.

Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not get on skin or clothing. Avoid contact with eyes. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

- **Inhalation**: May be harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat. May cause sensitization by inhalation.
- **Ingestion**: May be harmful if swallowed.
- **Skin**: Irritating to skin. May cause an allergic skin reaction.
- **Eyes**: Irritating to eyes.

Over-exposure signs/symptoms

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

Medical conditions aggravated by over-exposure

Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada’s Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).
See toxicological information (Section 11)
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>proprietary polyurethane prepolymer</td>
<td>Not available.</td>
<td>60 - 100</td>
</tr>
<tr>
<td>3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate</td>
<td>4098-71-9</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>4-methyl-m-phenylene diisocyanate</td>
<td>584-84-9</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>2-methyl-m-phenylene diisocyanate</td>
<td>91-08-7</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

**Eye contact**: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

**Skin contact**: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

**Inhalation**: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

**Ingestion**: If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

**Notes to physician**: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

**Flammability of the product**: Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

**Extinguishing media**

*Suitable*: Use dry chemical, CO₂, water spray (fog) or foam.

*Not suitable*: Do not use water jet.

**Special exposure hazards**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Hazardous combustion products**: Hydrogen cyanide (HCN). Cyanate and isocyanate.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

**Personal precautions**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
6. Accidental release measures

Large spill
Stop leak if without risk. Move containers from spill area. Approach release from upwind. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill
Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.
Dispose of via a licensed waste disposal contractor.

Special provisions
Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0.880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

7. Handling and storage

Handling
Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage
Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Precautions should be taken to minimize exposure to atmospheric humidity or water. CO₂ will be formed, which, in closed containers, could result in pressurization. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Ontario</th>
<th>Mexico</th>
<th>IPEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate</td>
<td>TWA</td>
<td>0.005 ppm</td>
<td>5 mg/m³ (as CN) S</td>
<td>0.005 ppm</td>
<td>0.01 ppm</td>
<td>Not established</td>
</tr>
<tr>
<td>4-methyl-m-phenylene diisocyanate</td>
<td>TWA</td>
<td>0.005 ppm SS</td>
<td>Not established</td>
<td>0.005 ppm</td>
<td>0.02 ppm</td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>0.02 ppm SS</td>
<td>0.02 ppm C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methyl-m-phenylene diisocyanate</td>
<td>TWA</td>
<td>0.005 ppm SS</td>
<td>Not established</td>
<td>0.005 ppm</td>
<td>0.02 ppm</td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>0.02 ppm SS</td>
<td>Not established</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes: Safety glasses with side shields.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves: butyl rubber

Respiratory: By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
8. Exposure controls/personal protection

**Skin**
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Environmental exposure controls**
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Restrictions on use**
Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

9. Physical and chemical properties

- **Physical state**: Liquid.
- **Flash point**: Closed cup: Not applicable.
- **Material supports combustion**: Yes.
- **Color**: Clear.
- **Odor**: Not available.
- **pH**: Not available.
- **Boiling/condensation point**: >37.78°C (>100°F)
- **Melting/freezing point**: Not available.
- **Specific gravity**: 0.96
- **Density (lbs / gal)**: 8.01
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Evaporation rate**: Not available.
- **VOC**: Not available.
- **Partition coefficient: n-octanol/water**: Not available.

10. Stability and reactivity

- **Stability**: Stable under recommended storage and handling conditions (see Section 7).
- **Conditions to avoid**: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Uncontrolled exothermic reactions occur with amines and alcohols. The product reacts slowly with water, resulting in the production of carbon dioxide. In closed containers, pressure buildup could result in distortion, expansion and, in extreme cases, bursting of the container.
- **Materials to avoid**: Reactive or incompatible with the following materials: oxidizing materials, strong acids, strong alkalis, Cyanate and isocyanate.
- **Hazardous decomposition products**: Cyanate and isocyanate.
- **Hazardous polymerization**: Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

**Acute toxicity**
11. Toxicological information

### Product/ingredient name

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-isocyanatomethyl-3,5, 5-trimethylcyclohexyl isocyanate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;1000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>1060 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rabbit</td>
<td>123 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>4-methyl-m-phenylene diisocyanate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rat</td>
<td>14 ppm</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

**Chronic toxicity**

Not available.

**Target organs**

Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes, central nervous system (CNS).

**Carcinogenicity**

Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-methyl-m-phenylene diisocyanate</td>
<td>A4</td>
<td>2B</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>2-methyl-m-phenylene diisocyanate</td>
<td>A4</td>
<td>2B</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Carcinogen Classification code:

ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: + Not listed or regulated as a carcinogen: -

12. Ecological information

**Environmental effects**

No known significant effects or critical hazards.

**Aquatic ecotoxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-methyl-m-phenylene diisocyanate</td>
<td>Acute LC50 164500 to 240400 ug/L Fresh water</td>
<td>Fish - Fathead minnow - Pimephales promelas</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

13. Disposal considerations

**Waste disposal**

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some
13. Disposal considerations

product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

<table>
<thead>
<tr>
<th>Regulation</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DOT</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>Reportable quantity</td>
</tr>
</tbody>
</table>

Reportable quantity RQ: CERCLA: Hazardous substances.: 2-methyl-m-phenylene diisocyanate: 100 lbs. (45.4 kg); 4-methyl-m-phenylene diisocyanate: 100 lbs. (45.4 kg); 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate: No RQ is being assigned to the generic or broad class.

15. Regulatory information

United States inventory (TSCA 8b): All components are listed or exempted.
Australia inventory (AICS): All components are listed or exempted.
Canada inventory (DSL): All components are listed or exempted.
China inventory (IECSC): At least one component is not listed.
Europe inventory (REACH): Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS): At least one component is not listed.
Korea inventory (KECI): At least one component is not listed.
New Zealand (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): At least one component is not listed.

United States

SARA 302/304: 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; 4-methyl-m-phenylene diisocyanate; 2-methyl-m-phenylene diisocyanate
CERCLA: Hazardous substances.: 2-methyl-m-phenylene diisocyanate: 100 lbs. (45.4 kg); 4-methyl-m-phenylene diisocyanate: 100 lbs. (45.4 kg); 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate: No RQ is being assigned to the generic or broad class.

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS #</th>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Reactive</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary polyurethane prepolymer</td>
<td>Not available.</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate</td>
<td>4098-71-9</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>5-trimethylcyclohexyl isocyanate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-methyl-m-phenylene diisocyanate</td>
<td>584-84-9</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2-methyl-m-phenylene diisocyanate</td>
<td>91-08-7</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
### 15. Regulatory information

<table>
<thead>
<tr>
<th>Product as-supplied</th>
<th>Y</th>
<th>Y</th>
<th>Y</th>
<th>N</th>
<th>N</th>
</tr>
</thead>
</table>

**SARA 313**

**Supplier notification**
- 4-methyl-m-phenylene diisocyanate
  - CAS number: 584-84-9
  - Concentration: 0.1 - 1
- 2-methyl-m-phenylene diisocyanate
  - CAS number: 91-08-7
  - Concentration: 0.1 - 1

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

### Canada

**WHMIS (Canada)**

- **Classification**
  - Flammability: 0
  - Health: 2
  - Reactivity: 0

### Mexico

**Classification**

- Flammability: 0
- Health: 2
- Reactivity: 0

### 16. Other information

**Hazardous Material Information System (U.S.A.)**

- Health: 2
- Flammability: 0
- Physical hazards: 0

( *) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

**National Fire Protection Association (U.S.A.)**

- Health: 2
- Flammability: 0
- Instability: 0

**Date of previous issue**: 8/14/2013.

**Organization that prepared the MSDS**: EHS

F Indicates information that has changed from previously issued version.

**Disclaimer**

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.