SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: Hardtop AS/HB Comp B
Code: 448
Product description: Hardener.
Product type: Liquid.
Other means of identification: Not available.

1.2 Details of the supplier of the safety data sheet

Manufacturer:
Jotun Australia
9 Cawley Road
Brooklyn 3012
Australia
Telephone + 61 39314 0722
Fax + 61 39314 0423
SDSJotun@jotun.com

Supplier:
Polymer Group
62 Stonedon Dve, East Tamaki
Auckland New Zealand
Phone: 64 9274 1400
Fax: 64 9274 1405
SDSJotun@jotun.com

1.4 Emergency telephone number

Emergency telephone number: Medical Emergencies 24 hours:
Poisons Information Centre (New Zealand) 0800 764 766

Section 2. Hazards identification

2.1 Classification of the substance or mixture

HSNO Classification:
3.1 - FLAMMABLE LIQUIDS - Category C
6.1 - ACUTE TOXICITY: ORAL - Category E
6.1 - ACUTE TOXICITY: INHALATION - Category D
6.3 - SKIN IRRITATION - Category B
6.4 - EYE IRRITATION - Category A (Irritant)
6.5 - SENSITIZATION - Category A (Respiratory)
6.7 - CARCINOGENICITY - Category B
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY [Fertility] - Category B
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY [Unborn child] - Category B
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): ORAL - Category B
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): INHALATION - Category B
9.1 - AQUATIC ECOTOXICITY - Category D

HSNO Data:
HSN Number: HSR002667
Group Standard: Surface Coatings and Colourants (Flammable, Toxic[6.1])

2.2 Label elements

Date of issue: 02.02.2015.
Section 2. Hazards identification

Signal word: Danger.

Hazard statements:
- Flammable liquid and vapour.
- May be harmful if inhaled.
- Causes mild skin irritation.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Suspected of causing cancer.
- May cause damage to organs if inhaled.
- May cause damage to organs if swallowed.
- Harmful to aquatic life.

Precautionary statements
Prevention:
- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. In case of inadequate ventilation wear respiratory protection. Keep away from ignition sources such as heat/sparks/open flame. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Keep out of reach of children. Do not breathe vapour or spray. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. If medical advice is needed: Have product container or label at hand.

Response:
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash hands after handling. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Storage:
- Store locked up. Store in a cool/well-ventilated place.

Disposal:
- Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification:
- None known.

This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) Regulations 2001.

This material is classified as a dangerous good according to criteria in New Zealand Standard 5433:2007 Transport of Dangerous Goods on Land.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Other means of identification:
- Not available.

CAS number/other identifiers:
- CAS number: Not applicable.
- EC number: Mixture.

Date of issue: 02.02.2015.
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>hexane, 1,6-diisocyanato-, homopolymer</td>
<td>50 - 100</td>
<td>28182-81-2</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>10 - 25</td>
<td>123-86-4</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>10 - 25</td>
<td>108-65-6</td>
</tr>
<tr>
<td>xylene</td>
<td>2.5 - 10</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>1 - 2.5</td>
<td>100-41-4</td>
</tr>
<tr>
<td>tosyl isocyanate</td>
<td>0 - 1</td>
<td>4083-64-1</td>
</tr>
<tr>
<td>hexamethylene-di-isocyanate</td>
<td>0 - 1</td>
<td>822-06-0</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.

Section 4. First-aid measures

**Description of necessary first aid measures**

**Inhalation**: Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

**Ingestion**: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

**Inhalation**: Harmful if inhaled. May cause damage to organs following a single exposure if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Ingestion**: May be harmful if swallowed. May cause damage to organs following a single exposure if swallowed. Irritating to mouth, throat and stomach.

**Skin contact**: Causes mild skin irritation.

**Eye contact**: Causes serious eye irritation.

**Over-exposure signs/symptoms**

**Inhalation**: Adverse symptoms may include the following: wheezing and breathing difficulties asthma reduced foetal weight increase in foetal deaths skeletal malformations

Date of issue: 02.02.2015.
Section 4. First-aid measures

Ingestion
- Adverse symptoms may include the following:
  - reduced foetal weight
  - increase in foetal deaths
  - skeletal malformations

Skin
- Adverse symptoms may include the following:
  - irritation
  - redness
  - reduced foetal weight
  - increase in foetal deaths
  - skeletal malformations

Eyes
- Adverse symptoms may include the following:
  - pain or irritation
  - watering
  - redness

Notes to physician
- In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Protection of first-aiders
- No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Suitable media
- Use dry chemical, CO₂, water spray (fog) or foam.

Not suitable
- Do not use water jet.

Specific hazards arising from the chemical
- Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products
- Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
  - nitrogen oxides

Hazchem code
- 3[Y]

Special precautions for fire-fighters
- 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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
- 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour 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 spilt 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). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up
Section 6. Accidental release measures

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

Large spill: Stop leak if without risk. Move containers from spill area. Approach the 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). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spill product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe 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. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. 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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. 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 only non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage, including any incompatibilities: 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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

See Technical Data Sheet / packaging for further information.

Section 8. Exposure controls/personal protection

Control parameters

Ingredient name

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>hexane, 1,6-diisocyanato-, homopolymer</td>
<td>NZ OSH (New Zealand, 2/2013). Skin sensitiser.</td>
</tr>
<tr>
<td></td>
<td>WES-TWA: 0,02 mg/m³, (measured as -NCO) 8 hours.</td>
</tr>
<tr>
<td></td>
<td>WES-STEL: 0,07 mg/m³, (measured as -NCO) 15 minutes.</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>NZ OSH (New Zealand, 2/2013).</td>
</tr>
<tr>
<td></td>
<td>WES-STEL: 950 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>WES-STEL: 200 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>WES-TWA: 713 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Date of issue: 02.02.2015.
### Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure Limits and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2-methoxy-1-methylethyl acetate</strong></td>
<td>WES-TWA: 150 ppm 8 hours. EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 548 mg/m³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 274 mg/m³ 8 hours. TWA: 50 ppm 8 hours.</td>
</tr>
<tr>
<td><strong>xylene</strong></td>
<td>NZ OSH (New Zealand, 2/2013). WES-TWA: 217 mg/m³ 8 hours. WES-TWA: 50 ppm 8 hours.</td>
</tr>
<tr>
<td><strong>ethylbenzene</strong></td>
<td>NZ OSH (New Zealand, 2/2013). WES-TWA: 100 ppm 8 hours. WES-TWA: 434 mg/m³ 8 hours. WES-STEL: 543 mg/m³ 15 minutes. WES-STEL: 125 ppm 15 minutes.</td>
</tr>
<tr>
<td><strong>hexamethylene-di-isocyanate</strong></td>
<td>NZ OSH (New Zealand, 2/2013). Skin sensitizer. Notes: measured as -NCO WES-TWA: 0.02 mg/m³, (measured as -NCO) 8 hours. WES-STEL: 0.07 mg/m³, (measured as -NCO) 15 minutes.</td>
</tr>
</tbody>
</table>

### Appropriate engineering controls
- 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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### 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.

### Individual protection measures

#### 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.

#### Respiratory protection
- 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.

#### Hand protection
- 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.

#### Eye protection
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

#### Skin protection
- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

#### Respiratory protection
- Self-contained respiratory equipment must be worn by spray operator, even when good ventilation is provided. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask.
### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Various colours</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Characteristic</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>127 to 145°C (260.6 to 293°F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Closed cup: 34°C (93.2°F)</td>
</tr>
<tr>
<td><strong>Burning rate</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Burning time</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Highest known value: 1 (n-butyl acetate) Weighted average: 0.73 compared with butyl acetate</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>1.1 - 7.5%</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>Highest known value: 1.2 kPa (9 mm Hg) (at 20°C) (n-butyl acetate). Weighted average: 0.87 kPa (6.53 mm Hg) (at 20°C)</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Highest known value: 4.6 (Air = 1) (2-methoxy-1-methylethyl acetate). Weighted average: 4.09 (Air = 1)</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>1.04 g/cm³</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Solubility in water</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Lowest known value: 333°C (631.4°F) (2-methoxy-1-methylethyl acetate).</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>SADT</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Dynamic: Highest known value: 0.581 cP (xylene) Kinematic: Highest known value: 1.13 cSt (2-methoxy-1-methylethyl acetate) Weighted average: 0.95 cSt Kinematic (40°C): Highest known value: 0.641 cSt (ethylbenzene)</td>
</tr>
</tbody>
</table>

#### Aerosol product

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of aerosol</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Heat of combustion</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Ignition distance</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Enclosed space ignition - Time equivalent</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Enclosed space ignition - Deflagration density</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flame height</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flame duration</strong></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical stability</strong></td>
<td>The product is stable.</td>
</tr>
<tr>
<td><strong>Possibility of hazardous reactions</strong></td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td><strong>Conditions to avoid</strong></td>
<td>Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.</td>
</tr>
<tr>
<td><strong>Incompatible materials</strong></td>
<td>Reactive or incompatible with the following materials: oxidizing materials</td>
</tr>
</tbody>
</table>

**Date of issue**: 02.02.2015.
Section 10. Stability and reactivity

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

Section 11. Toxicological information

**Information on the likely routes of exposure**

- **Inhalation**: Harmful if inhaled. May cause damage to organs following a single exposure if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

- **Ingestion**: May be harmful if swallowed. May cause damage to organs following a single exposure if swallowed. Irritating to mouth, throat and stomach.

- **Skin contact**: Causes mild skin irritation.

- **Eye contact**: Causes serious eye irritation.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Inhalation**: Adverse symptoms may include the following:
  - Wheezing and breathing difficulties
  - Asthma
  - Reduced foetal weight
  - Increase in foetal deaths
  - Skeletal malformations

- **Ingestion**: Adverse symptoms may include the following:
  - Reduced foetal weight
  - Increase in foetal deaths
  - Skeletal malformations

- **Skin contact**: Adverse symptoms may include the following:
  - Irritation
  - Redness
  - Reduced foetal weight
  - Increase in foetal deaths
  - Skeletal malformations

- **Eye contact**: Adverse symptoms may include the following:
  - Pain or irritation
  - Watering
  - Redness

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Acute toxicity**

<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>hexane, 1,6-diisocyanato-, homopolymer</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>18500 mg/m³</td>
<td>1 hours</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>&gt;21,1 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;17600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>13100 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;5 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>xylene</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>8532 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>6700 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4300 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>tosyl isocyanate</td>
<td>LC50 Inhalation Gas.</td>
<td>Rabbit</td>
<td>4000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2234 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

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Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>hexane, 1,6-diisocyanato-, homopolymer</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>tosyl isocyanate</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 microliters</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitisation**

Not available.

**Potential chronic health effects**

**General**

: No known significant effects or critical hazards.

**Inhalation**

: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Ingestion**

: No known significant effects or critical hazards.

**Skin contact**

: No known significant effects or critical hazards.

**Eye contact**

: No known significant effects or critical hazards.

**Carcinogenicity**

: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity**

: Not available.

**Teratogenicity**

: Not available.

**Developmental effects**

: No known significant effects or critical hazards.

**Fertility effects**

: Suspected of damaging fertility.

**Chronic toxicity**

Not available.

**Carcinogenicity**

Not available.

**Mutagenicity**

Not available.

**Teratogenicity**

Not available.

**Reproductive toxicity**

Not available.

**Specific target organ toxicity**

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>Category B</td>
<td>Oral inhalation</td>
<td>Not determined</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>Category B</td>
<td>Inhalation</td>
<td>Not determined</td>
</tr>
<tr>
<td>hexamethylene-di-isocyanate</td>
<td>Category A</td>
<td>Inhalation</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

Not available.

**Numerical measures of toxicity**

**Acute toxicity estimates**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>4036,9 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>11922,3 mg/kg</td>
</tr>
<tr>
<td>Inhalation (vapours)</td>
<td>13,85 mg/l</td>
</tr>
</tbody>
</table>

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Section 12. Ecological information

Ecotoxicity: This material is harmful to aquatic life.

Aquatic and terrestrial toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethylbenzene</td>
<td>Acute EC50 7.2 mg/l</td>
<td>Algae</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2.93 mg/l</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4.2 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Persistence/degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>xylene</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP$_{ow}$</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>1.78</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>0.56</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>xylene</td>
<td>3.12</td>
<td>8.1 to 25.9</td>
<td>low</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>3.15</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>hexamethylene-di-isocyanate</td>
<td>1.08</td>
<td>57.63</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (K$_{oc}$): Not available.

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimised 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. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Do not allow to enter drains or watercourses. Material and/or container must be disposed of as hazardous waste.

Section 14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand Class</td>
<td>1263</td>
<td>Paint.</td>
<td>3</td>
<td>III</td>
<td></td>
<td>Hazchem code 3[Y]</td>
</tr>
<tr>
<td>ADG Class</td>
<td>1263</td>
<td>Paint.</td>
<td>3</td>
<td>III</td>
<td></td>
<td>Hazchem code 3[Y]</td>
</tr>
<tr>
<td>UN Class</td>
<td>1263</td>
<td>Paint.</td>
<td>3</td>
<td>III</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

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Section 14. Transport information

| ADR/RID Class | 1263 | Paint. | 3 | III | Hazard identification number
|              |      |        |   |     | 30 |
| Special provisions | 640E |
| Tunnel code (D/E) | -   |

IATA Class 1263 Paint. 3 III

IMDG Class 1263 Paint. 3 III

Emergency schedules (EmS) F-E, S-E

PG*: Packing group

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in accordance with ADR/RID, IMDG/IMO and ICAO/IATA and national regulation.

Section 15. Regulatory information

**National regulations**

**Standard Uniform Schedule of Medicine and Poisons**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>No listed substance</td>
<td></td>
</tr>
</tbody>
</table>

**New Zealand Inventory of Chemicals (NZIoC)**

**Australia inventory (AICS)**

**HSNO Classification**

3.1 - FLAMMABLE LIQUIDS - Category C
6.1 - ACUTE TOXICITY: ORAL - Category E
6.1 - ACUTE TOXICITY: INHALATION - Category D
6.3 - SKIN IRRITATION - Category B
6.4 - EYE IRRITATION - Category A (Irritant)
6.5 - SENSITIZATION - Category A (Respiratory)
6.7 - CARCINOGENICITY - Category B
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY [Fertility] - Category B
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY [Unborn child] - Category B
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): ORAL - Category B
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): INHALATION - Category B
9.1 - AQUATIC ECOTOXICITY - Category D

**HSNO Group Standard**

HSR02667 Surface coatings and colourants (Flammable, toxic)

**HSNO Approval Number**

Not applicable

**Approved Handlers Certificate**

Approved Handlers certificate is exempt.

**Toxic substances schedule (NZ)**

3.1 - FLAMMABLE LIQUIDS - Category C
6.1 - ACUTE TOXICITY: ORAL - Category E
6.1 - ACUTE TOXICITY: INHALATION - Category D
6.3 - SKIN IRRITATION - Category B
6.4 - EYE IRRITATION - Category A (Irritant)
6.5 - SENSITIZATION - Category A (Respiratory)
6.7 - CARCINOGENICITY - Category B
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY [Fertility] - Category B
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY [Unborn child] -

**Date of issue**

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Section 15. Regulatory information

Safety, health and environmental regulations specific for the product:
No known specific national and/or regional regulations applicable to this product (including its ingredients).

Category B
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): ORAL - Category B
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE): INHALATION - Category B
9.1 - AQUATIC ECOTOXICITY - Category D

Section 16. Other information

Notice to reader

History
Date of printing : 02.02.2015.
Date of issue/Date of revision : 02.02.2015.
Date of previous issue : 02.02.2015.
Version : 1.03

Indicates information that has changed from previously issued version.

Disclaimer
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Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.