

**Urethane Coatings a division of Era Polymers Pty Ltd**

**Chemwatch Hazard Alert Code: 2**

Catalogue number: **UC PURATHANE HARDENER - AUSTRALIA**

Issue Date: **08/12/2016**

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Safety Data Sheet according to WHS and ADG requirements

S.GHS.AUS.EN

**SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING**

**Product Identifier**

|                                      |                    |
|--------------------------------------|--------------------|
| <b>Product name</b>                  | PURATHANE HARDENER |
| <b>Synonyms</b>                      | Not Available      |
| <b>Other means of identification</b> | Not Available      |

**Relevant identified uses of the substance or mixture and uses advised against**

|                                 |   |
|---------------------------------|---|
| <b>Relevant identified uses</b> | Hardener for PURATHANE timber, cork and parquetry finish. |
|---------------------------------|---|

**Details of the supplier of the safety data sheet**

|                                |  |
|--------------------------------|--|
| <b>Registered company name</b> | Urethane Coatings a division of Era Polymers Pty Ltd |
| <b>Address</b>                 | 2-4 Green Street, Banksmeadow NSW 2019 Australia     |
| <b>Telephone</b>               | +61 (0)2 9666 3888                                   |
| <b>Fax</b>                     | +61 (0)2 9666 4805                                   |
| <b>Website</b>                 | www.urethanecoatings.com.au                          |
| <b>Email</b>                   | george@urethanecoatings.com.au                       |

**Emergency telephone number**

|  |                |
|--|----------------|
| <b>Association / Organisation</b>        | CHEMWATCH      |
| <b>Emergency telephone numbers</b>       | 1800 039 008   |
| <b>Other emergency telephone numbers</b> | +612 9186 1132 |

**CHEMWATCH EMERGENCY RESPONSE**

| Primary Number | Alternative Number 1 | Alternative Number 2 |
|----------------|----------------------|----------------------|
| 1800 039 008   | 1800 039 008         | +612 9186 1132       |

Once connected and if the message is not in your preferred language then please dial 01


**SECTION 2 HAZARDS IDENTIFICATION**

**Classification of the substance or mixture**

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

|                                      |   |
|--------------------------------------|---|
| <b>Poisons Schedule</b>              | Not Applicable  |
| <b>Classification <sup>[1]</sup></b> | Eye Irritation Category 2A, Acute Toxicity (Inhalation) Category 4, Chronic Aquatic Hazard Category 3, Skin Sensitizer Category 1 |
| <b>Legend:</b>                       | 1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI    |

**Label elements**

|                           |   |
|---------------------------|---|
| <b>GHS label elements</b> |  |
| <b>SIGNAL WORD</b>        | <b>WARNING</b>  |

**Hazard statement(s)**

|             |  |
|-------------|--|
| <b>H319</b> | Causes serious eye irritation.                     |
| <b>H332</b> | Harmful if inhaled.                                |
| <b>H412</b> | Harmful to aquatic life with long lasting effects. |
| <b>H317</b> | May cause an allergic skin reaction.               |

**Precautionary statement(s) Prevention**

|             |  |
|-------------|--|
| <b>P101</b> | If medical advice is needed, have product container or label at hand.      |
| <b>P102</b> | Keep out of reach of children.   |
| <b>P103</b> | Read label before use.   |
| <b>P271</b> | Use only outdoors or in a well-ventilated area.                            |
| <b>P280</b> | Wear protective gloves/protective clothing/eye protection/face protection. |

**Precautionary statement(s) Response**

|                       |  |
|-----------------------|--|
| <b>P363</b>           | Wash contaminated clothing before reuse.   |
| <b>P302+P352</b>      | IF ON SKIN: Wash with plenty of soap and water.  |
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| <b>P312</b>           | Call a POISON CENTER or doctor/physician if you feel unwell.   |
| <b>P333+P313</b>      | If skin irritation or rash occurs: Get medical advice/attention.   |

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

|             |   |
|-------------|---|
| <b>P501</b> | Dispose of contents/container in accordance with local regulations. |
|-------------|---|

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No        | %[weight] | Name   |
|---------------|-----------|--|
| 111109-77-4   | 30-60     | <u>dipropylene glycol dimethyl ether</u>       |
| 112-07-2      | 1-10      | <u>ethylene glycol monobutyl ether acetate</u> |
| 822-06-0      | <0.7      | <u>hexamethylene diisocyanate</u>              |
| Not Available | to 100    | All other substances non hazardous             |

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>  |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>  |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul> <p>Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.</p> |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>  |

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

Treat symptomatically.

For acute or short term repeated exposures to ethylene glycol:

- ▶ Early treatment of ingestion is important. Ensure emesis is satisfactory.
- ▶ Test and correct for metabolic acidosis and hypocalcaemia.
- ▶ Apply sustained diuresis when possible with hypertonic mannitol.

- ▶ Evaluate renal status and begin haemodialysis if indicated. [I.L.O]
- ▶ Rapid absorption is an indication that emesis or lavage is effective only in the first few hours. Cathartics and charcoal are generally not effective.
- ▶ Correct acidosis, fluid/electrolyte balance and respiratory depression in the usual manner. Systemic acidosis (below 7.2) can be treated with intravenous sodium bicarbonate solution.
- ▶ Ethanol therapy prolongs the half-life of ethylene glycol and reduces the formation of toxic metabolites.
- ▶ Pyridoxine and thiamine are cofactors for ethylene glycol metabolism and should be given (50 to 100 mg respectively) intramuscularly, four times per day for 2 days.
- ▶ Magnesium is also a cofactor and should be replenished. The status of 4-methylpyrazole, in the treatment regime, is still uncertain. For clearance of the material and its metabolites, haemodialysis is much superior to peritoneal dialysis.

[Ellenhorn and Barceloux: Medical Toxicology]

It has been suggested that there is a need for establishing a new biological exposure limit before a workshift that is clearly below 100 mmol ethoxy-acetic acids per mole creatinine in morning urine of people occupationally exposed to ethylene glycol ethers. This arises from the finding that an increase in urinary stones may be associated with such exposures.

Laitinen J., et al: *Occupational & Environmental Medicine* 1996; 53, 595-600

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

### Special hazards arising from the substrate or mixture

|                             |  |
|-----------------------------|--|
| <b>Fire Incompatibility</b> | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|--|

### Advice for firefighters

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> </ul>   |
| <b>Fire/Explosion Hazard</b> | <p><b>WARNING:</b> In use may form flammable/ explosive vapour-air mixtures.</p> <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> </ul> <p>Combustion products include:<br/>carbon dioxide (CO<sub>2</sub>)<br/>isocyanates<br/>and minor amounts of<br/>hydrogen cyanide<br/>nitrogen oxides (NO<sub>x</sub>)<br/>other pyrolysis products typical of burning organic material.<br/>May emit poisonous fumes.<br/>May emit corrosive fumes.</p> |
| <b>HAZCHEM</b>               | Not Applicable   |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

|                     |   |
|---------------------|---|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> </ul> |
| <b>Major Spills</b> | <p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> </ul>                      |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

|                      |   |
|----------------------|---|
| <b>Safe handling</b> | <p>The tendency of many ethers to form explosive peroxides is well documented. Ethers lacking non-methyl hydrogen atoms adjacent to the ether link are thought to be relatively safe</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT concentrate by evaporation, or evaporate extracts to dryness, as residues may contain explosive peroxides with DETONATION potential.</b></li> <li>▶ Any static discharge is also a source of hazard.</li> </ul> |
|----------------------|---|

|                          |  |
|--------------------------|--|
|                          | <ul style="list-style-type: none"> <li>▶ Before any distillation process remove trace peroxides by shaking with excess 5% aqueous ferrous sulfate solution or by percolation through a column of activated alumina.</li> <li>▶ Distillation results in uninhibited ether distillate with considerably increased hazard because of risk of peroxide formation on storage. The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example.</li> </ul> <p>Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.</p> <ul style="list-style-type: none"> <li>▶ A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul> |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> </ul>  |

#### Conditions for safe storage, including any incompatibilities

|                                |   |
|--------------------------------|---|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>  |
| <b>Storage incompatibility</b> | <p>Dipropylene glycol monomethyl ether:</p> <ul style="list-style-type: none"> <li>▶ may form unstable peroxides on contact with air</li> <li>▶ reacts violently with strong oxidisers, permanganates, peroxides, ammonium persulfate, bromine dioxide, sulfuric acid, nitric acid, perchloric acid and other strong acids</li> <li>▶ is incompatible with acid halides, aliphatic amines, alkalis, boranes, isocyanates</li> <li>▶ attacks some plastics, rubber and coatings</li> <li>▶ Glycol ethers may form peroxides under certain conditions; the potential for peroxide formation is enhanced when these substances are used in processes such as distillation where they are concentrated or even evaporated to near-dryness or dryness; storage under a nitrogen atmosphere is recommended to minimise the possible formation of highly reactive peroxides</li> <li>▶ Nitrogen blanketing is recommended if transported in containers at temperatures within 15 deg C of the flash-point and at or above the flash-point - large containers may first need to be purged and inerted with nitrogen prior to loading</li> <li>▶ In the presence of strong bases or the salts of strong bases, at elevated temperatures, the potential exists for runaway reactions.</li> <li>▶ Contact with aluminium should be avoided; release of hydrogen gas may result- glycol ethers will corrode scratched aluminium surfaces.</li> <li>▶ May discolour in mild steel/ copper; lined containers, glass or stainless steel is preferred</li> <li>▶ Glycols and their ethers undergo violent decomposition in contact with 70% perchloric acid. This seems likely to involve formation of the glycol perchlorate esters (after scission of ethers) which are explosive, those of ethylene glycol and 3-chloro-1,2-propanediol being more powerful than glyceryl nitrate, and the former so sensitive that it explodes on addition of water . Investigation of the hazards associated with use of 2-butoxyethanol for alloy electropolishing showed that mixtures with 50-95% of acid at 20 deg C, or 40-90% at 75 C, were explosive and initiatable by sparks.</li> <li>▶ Avoid reaction with oxidising agents</li> <li>▶ <b>NOTE:</b> May develop pressure in containers; open carefully. Vent periodically.</li> <li>▶ Segregate from alcohol, water.</li> </ul> |

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

| Source                       | Ingredient                              | Material name             | TWA                | STEL               | Peak          | Notes |
|------------------------------|---|---------------------------|--------------------|--------------------|---------------|-------|
| Australia Exposure Standards | ethylene glycol monobutyl ether acetate | 2-Butoxyethyl acetate     | 133 mg/m3 / 20 ppm | 333 mg/m3 / 50 ppm | Not Available | Sk    |
| Australia Exposure Standards | hexamethylene diisocyanate              | Isocyanates, all (as-NCO) | 0.02 mg/m3         | 0.07 mg/m3         | Not Available | Sen   |

#### EMERGENCY LIMITS

| Ingredient                              | Material name  | TEEL-1    | TEEL-2  | TEEL-3  |
|---|--|-----------|---------|---------|
| ethylene glycol monobutyl ether acetate | Butoxyethanol acetate, 2-; (Ethylene glycol monobutyl ether acetate) | 15 ppm    | 35 ppm  | 210 ppm |
| hexamethylene diisocyanate              | Hexamethylene diisocyanate; (1,6-Diisocyanatohexane)                 | 0.018 ppm | 0.2 ppm | 3 ppm   |

| Ingredient                              | Original IDLH | Revised IDLH  |
|---|---------------|---------------|
| dipropylene glycol dimethyl ether       | Not Available | Not Available |
| ethylene glycol monobutyl ether acetate | Not Available | Not Available |
| hexamethylene diisocyanate              | Not Available | Not Available |
| All other substances non hazardous      | Not Available | Not Available |

### Exposure controls

|   |   |
|---|---|
| <b>Appropriate engineering controls</b> | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and</p> |
|---|---|

|                                |  |
|--------------------------------|--|
|                                | 'removes' air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly.   |
| <b>Eye and face protection</b> | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.</li> </ul>  |
| <b>Skin protection</b>         | See Hand protection below  |
| <b>Hands/feet protection</b>   | <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands.</p> |
| <b>Body protection</b>         | See Other protection below   |
| <b>Other protection</b>        | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> </ul>  |
| <b>Thermal hazards</b>         | Not Available  |

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**'Forsberg Clothing Performance Index'.**

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

PURATHANE HARDENER

| Material          | CPI |
|-------------------|-----|
| BUTYL             | C   |
| NAT+NEOPR+NITRILE | C   |
| NATURAL RUBBER    | C   |
| NEOPRENE          | C   |
| PVA               | C   |
| SARANEX-23        | C   |
| VITON             | C   |

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as 'feel' or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## Respiratory protection

**Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.**

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--|----------------------|----------------------|
| up to 10                           | 1000   | A-AUS / Class 1      | -                    |
| up to 50                           | 1000   | -                    | A-AUS / Class 1      |
| up to 50                           | 5000   | Airline *            | -                    |
| up to 100                          | 5000   | -                    | A-2                  |
| up to 100                          | 10000  | -                    | A-3                  |
| 100+                               | -  | -                    | Airline**            |

\* -Continuous Flow

\*\* -Continuous-flow or positive pressure demand.

A (All classes) = Organic vapours, B AUS or B1 = Acid gases, B2 = Acid gas or hydrogencyanide (HCN), B3 = Acid gas or hydrogen cyanide (HCN), E = Sulfur dioxide (SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia (NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds (below 65 deg C)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|   |               |  |               |
|---|---------------|--|---------------|
| <b>Appearance</b>                                   | Clear liquid  |  |               |
| <b>Physical state</b>                               | Liquid        | <b>Relative density (Water = 1)</b>            | 1.09          |
| <b>Odour</b>  | Not Available | <b>Partition coefficient n-octanol / water</b> | Not Available |
| <b>Odour threshold</b>                              | Not Available | <b>Auto-ignition temperature (°C)</b>          | Not Available |
| <b>pH (as supplied)</b>                             | Not Available | <b>Decomposition temperature</b>               | Not Available |
| <b>Melting point / freezing point (°C)</b>          | Not Available | <b>Viscosity (cSt)</b>                         | Not Available |
| <b>Initial boiling point and boiling range (°C)</b> | Not Available | <b>Molecular weight (g/mol)</b>                | Not Available |
| <b>Flash point (°C)</b>                             | Not Available | <b>Taste</b>                                   | Not Available |
| <b>Evaporation rate</b>                             | Not Available | <b>Explosive properties</b>                    | Not Available |
| <b>Flammability</b>                                 | Not Available | <b>Oxidising properties</b>                    | Not Available |

## PURATHANE HARDENER

|                           |               |                                  |               |
|---------------------------|---------------|----------------------------------|---------------|
| Upper Explosive Limit (%) | Not Available | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Available | Volatile Component (%vol)        | Not Available |
| Vapour pressure (kPa)     | Not Available | Gas group                        | Not Available |
| Solubility in water (g/L) | Reacts        | pH as a solution (1%)            | Not Available |
| Vapour density (Air = 1)  | Not Available | VOC g/L                          | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Reactivity                         | See section 7  |
| Chemical stability                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| Possibility of hazardous reactions | See section 7  |
| Conditions to avoid                | See section 7  |
| Incompatible materials             | See section 7  |
| Hazardous decomposition products   | See section 5  |

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

|              |  |
|--------------|--|
| Inhaled      | Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.  |
| Ingestion    | The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.   |
| Skin Contact | <p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> |
| Eye          | This material can cause eye irritation and damage in some persons.   |
| Chronic      | Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.  |

| PURATHANE HARDENER                        | TOXICITY  | IRRITATION   |
|---|---|--|
|   | Not Available   | Not Available  |
| dipropylene glycol dimethyl ether         | TOXICITY  | IRRITATION   |
|   | dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup><br>Oral (rat) LD50: 3300 mg/kg <sup>[2]</sup>     | Not Available  |
| ethylene glycol monobutyl ether acetate   | TOXICITY  | IRRITATION   |
|   | Dermal (rabbit) LD50: 1500 mg/kg <sup>[2]</sup><br>Oral (rat) LD50: 7012.4 mg/kg <sup>[1]</sup> | Eye (rabbit): 500 mg/24hr - mild<br>Skin (rabbit): 500 mg - mild |
| hexamethylene diisocyanate                | TOXICITY  | IRRITATION   |
|   | dermal (rat) LD50: >7000 mg/kg <sup>[1]</sup>   | Not Available  |
|   | Inhalation (rat) LC50: 0.06 mg/L/4hr <sup>[2]</sup>   |  |
|   | Inhalation (rat) LC50: 0.124 mg/L/4hr <sup>[2]</sup>  |  |
|   | Inhalation (rat) LC50: 0.462 mg/L/4hr <sup>[2]</sup>  |  |
| Oral (rat) LD50: 710 mg/kg <sup>[1]</sup> |   |  |

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

|                           |   |                 |   |
|---------------------------|---|-----------------|---|
| Acute Toxicity            | ✓ | Carcinogenicity | ⊗ |
| Skin Irritation/Corrosion | ⊗ | Reproductivity  | ⊗ |

## PURATHANE HARDENER

|                                   |   |                          |   |
|-----------------------------------|---|--------------------------|---|
| Serious Eye Damage/Irritation     | ✓ | STOT - Single Exposure   | ⊘ |
| Respiratory or Skin sensitisation | ✓ | STOT - Repeated Exposure | ⊘ |
| Mutagenicity                      | ⊘ | Aspiration Hazard        | ⊘ |

Legend: ✗ - Data available but does not fill the criteria for classification  
✓ - Data required to make classification available  
⊘ - Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

| Ingredient                              | Endpoint | Test Duration (hr) | Species                       | Value        | Source |
|---|----------|--------------------|-------------------------------|--------------|--------|
| dipropylene glycol dimethyl ether       | LC50     | 96                 | Fish                          | 441.198mg/L  | 3      |
| dipropylene glycol dimethyl ether       | EC50     | 96                 | Algae or other aquatic plants | 2324.791mg/L | 3      |
| dipropylene glycol dimethyl ether       | EC50     | 384                | Crustacea                     | 101.891mg/L  | 3      |
| ethylene glycol monobutyl ether acetate | LC50     | 96                 | Fish                          | 41.186mg/L   | 3      |
| ethylene glycol monobutyl ether acetate | EC50     | 48                 | Crustacea                     | =37mg/L      | 1      |
| ethylene glycol monobutyl ether acetate | EC50     | 96                 | Algae or other aquatic plants | 3.228mg/L    | 3      |
| ethylene glycol monobutyl ether acetate | EC0      | 48                 | Crustacea                     | =10mg/L      | 1      |
| hexamethylene diisocyanate              | LC50     | 96                 | Fish                          | 22mg/L       | 1      |
| hexamethylene diisocyanate              | EC50     | 72                 | Algae or other aquatic plants | >77.4mg/L    | 2      |
| hexamethylene diisocyanate              | EC0      | 24                 | Crustacea                     | <0.33mg/L    | 1      |
| hexamethylene diisocyanate              | NOEC     | 72                 | Algae or other aquatic plants | 11.7mg/L     | 2      |

## Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

## Persistence and degradability

| Ingredient                              | Persistence: Water/Soil | Persistence: Air |
|---|-------------------------|------------------|
| dipropylene glycol dimethyl ether       | HIGH                    | HIGH             |
| ethylene glycol monobutyl ether acetate | LOW                     | LOW              |
| hexamethylene diisocyanate              | LOW                     | LOW              |

## Bioaccumulative potential

| Ingredient                              | Bioaccumulation       |
|---|-----------------------|
| dipropylene glycol dimethyl ether       | LOW (LogKOW = 0.3534) |
| ethylene glycol monobutyl ether acetate | LOW (BCF = 3.2)       |
| hexamethylene diisocyanate              | LOW (LogKOW = 3.1956) |

## Mobility in soil

| Ingredient                              | Mobility         |
|---|------------------|
| dipropylene glycol dimethyl ether       | LOW (KOC = 10)   |
| ethylene glycol monobutyl ether acetate | LOW (KOC = 10)   |
| hexamethylene diisocyanate              | LOW (KOC = 5864) |

## SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

|                              |   |
|------------------------------|---|
| Product / Packaging disposal | <ul style="list-style-type: none"> <li>Containers may still present a chemical hazard/ danger when empty.</li> <li>Return to supplier for reuse/ recycling if possible.</li> </ul> Otherwise: <ul style="list-style-type: none"> <li>If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then</li> </ul> |
|------------------------------|---|

Continued...

- ▶ puncture containers, to prevent re-use, and bury at an authorised landfill.
  - ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.
- Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
- A Hierarchy of Controls seems to be common - the user should investigate:
- ▶ Reduction
  - ▶ Reuse
  - ▶ Recycling
  - ▶ Disposal (if all else fails)
- This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means.
- ▶ **DO NOT allow wash water from cleaning or process equipment to enter drains.**
  - ▶ It may be necessary to collect all wash water for treatment before disposal.
  - ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
  - ▶ Where in doubt contact the responsible authority.
  - ▶ Recycle wherever possible or consult manufacturer for recycling options.
  - ▶ Consult State Land Waste Authority for disposal.
  - ▶ Bury or incinerate residue at an approved site.
  - ▶ Recycle containers if possible, or dispose of in an authorised landfill.

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

|                  |                |
|------------------|----------------|
| Marine Pollutant | NO             |
| HAZCHEM          | Not Applicable |

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

**DIPROPYLENE GLYCOL DIMETHYL ETHER(111109-77-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Inventory of Chemical Substances (AICS)

**ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE(112-07-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

**HEXAMETHYLENE DIISOCYANATE(822-06-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

Australia Work Health and Safety Regulations 2016 - Hazardous chemicals (other than lead) requiring health monitoring

| National Inventory            | Status   |
|-------------------------------|--|
| Australia - AICS              | Y  |
| Canada - DSL                  | Y  |
| China - IECSC                 | Y  |
| Europe - EINEC / ELINCS / NLP | Y  |
| Korea - KECI                  | Y  |
| New Zealand - NZIoC           | Y  |
| Philippines - PICCS           | Y  |
| USA - TSCA                    | Y  |
| <b>Legend:</b>                | Y = All ingredients are on the inventory<br>N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

## SECTION 16 OTHER INFORMATION

### Other information

### Ingredients with multiple cas numbers

| Name                              | CAS No                  |
|-----------------------------------|-------------------------|
| dipropylene glycol dimethyl ether | 111109-77-4, 89399-28-0 |



available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

#### Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average  
PC – STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit,  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL: No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index