



## ARDEX R 74 PU Part B

### Ardex (Ardex NZ)

Chemwatch: 5368-34  
Version No: 3.1.1.1  
Safety Data Sheet according to HSNO Regulations

Chemwatch Hazard Alert Code: 2

Issue Date: 01/11/2019  
Print Date: 16/07/2020  
S.GHS.NZL.EN

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

### Product Identifier

|                               |                      |
|-------------------------------|----------------------|
| Product name                  | ARDEX R 74 PU Part B |
| Synonyms                      | Not Available        |
| Other means of identification | Not Available        |

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

|                          |                            |
|--------------------------|----------------------------|
| Relevant identified uses | Professional use, coating. |
|--------------------------|----------------------------|

### Details of the supplier of the safety data sheet

|                         |  |
|-------------------------|--|
| Registered company name | Ardex (Ardex NZ)                                 |
| Address                 | 32 Lane Street Woolston Christchurch New Zealand |
| Telephone               | +64 3384 3029                                    |
| Fax                     | +64 3384 9779                                    |
| Website                 | Not Available                                    |
| Email                   | Not Available                                    |

### Emergency telephone number

|                                   |                       |
|-----------------------------------|-----------------------|
| Association / Organisation        | Ardex (Ardex NZ)      |
| Emergency telephone numbers       | +64 3 373 6900        |
| Other emergency telephone numbers | 0800 764 766 (NZ NPC) |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Not regulated for transport of Dangerous Goods.**

### CHEMWATCH HAZARD RATINGS


|              | Min | Max |  |
|--------------|-----|-----|--|
| Flammability | 1   | 2   |  |
| Toxicity     | 2   | 3   |  |
| Body Contact | 2   | 3   |  |
| Reactivity   | 1   | 2   |  |
| Chronic      | 2   | 3   |  |

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

|   |   |
|---|---|
| Classification [1]                              | Acute Toxicity (Inhalation) Category 2, Skin Corrosion/Irritation Category 3, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 1, Specific target organ toxicity - repeated exposure Category 1 |
| Legend:   | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI  |
| Determined by Chemwatch using GHS/HSNO criteria | 6.1B (inhalation), 6.3B, 6.4A, 6.9A   |

### Label elements

ARDEX R 74 PU Part B

|                            |   |
|----------------------------|---|
| <b>Hazard pictogram(s)</b> |  |
|----------------------------|---|

|                    |               |
|--------------------|---------------|
| <b>SIGNAL WORD</b> | <b>DANGER</b> |
|--------------------|---------------|

**Hazard statement(s)**

|             |   |
|-------------|---|
| <b>H330</b> | Fatal if inhaled.   |
| <b>H316</b> | Causes mild skin irritation.                                    |
| <b>H319</b> | Causes serious eye irritation.                                  |
| <b>H370</b> | Causes damage to organs.  |
| <b>H372</b> | Causes damage to organs through prolonged or repeated exposure. |

**Precautionary statement(s) Prevention**

|             |  |
|-------------|--|
| <b>P260</b> | Do not breathe mist/vapours/spray.   |
| <b>P271</b> | Use only outdoors or in a well-ventilated area.                            |
| <b>P270</b> | Do not eat, drink or smoke when using this product.                        |
| <b>P280</b> | Wear protective gloves/protective clothing/eye protection/face protection. |

**Precautionary statement(s) Response**

|                  |   |
|------------------|---|
| <b>P304+P340</b> | IF INHALED: Remove person to fresh air and keep comfortable for breathing.  |
| <b>P308+P311</b> | IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider. |
| <b>P310</b>      | Immediately call a POISON CENTER/doctor/physician/first aider.              |
| <b>P320</b>      | Specific treatment is urgent (see advice on this label).                    |

**Precautionary statement(s) Storage**

|                  |  |
|------------------|--|
| <b>P403+P233</b> | Store in a well-ventilated place. Keep container tightly closed. |
| <b>P405</b>      | Store locked up.   |

**Precautionary statement(s) Disposal**

|             |  |
|-------------|--|
| <b>P501</b> | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|-------------|--|

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No    | %[weight] | Name  |
|-----------|-----------|---|
| 9016-87-9 | >80       | <u>polymeric diphenylmethane diisocyanate</u> |

**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>▶ Immediately hold eyelids apart and flush the eye continuously with 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>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</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 or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</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, without delay.</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> |

**Ingestion**

- ▶ For advice, contact a Poisons Information Centre or a doctor at once.
- ▶ Urgent hospital treatment is likely to be needed.
- ▶ **If swallowed do NOT induce vomiting.**
- ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- ▶ Observe the patient carefully.
- ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- ▶ Transport to hospital or doctor without delay.

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

For sub-chronic and chronic exposures to isocyanates:

- ▶ This material may be a potent pulmonary sensitiser which causes bronchospasm even in patients without prior airway hyperreactivity.
- ▶ Clinical symptoms of exposure involve mucosal irritation of respiratory and gastrointestinal tracts.
- ▶ Conjunctival irritation, skin inflammation (erythema, pain vesiculation) and gastrointestinal disturbances occur soon after exposure.
- ▶ Pulmonary symptoms include cough, burning, substernal pain and dyspnoea.
- ▶ Some cross-sensitivity occurs between different isocyanates.
- ▶ Noncardiogenic pulmonary oedema and bronchospasm are the most serious consequences of exposure. Markedly symptomatic patients should receive oxygen, ventilatory support and an intravenous line.
- ▶ Treatment for asthma includes inhaled sympathomimetics (epinephrine [adrenalin], terbutaline) and steroids.
- ▶ Activated charcoal (1 g/kg) and a cathartic (sorbitol, magnesium citrate) may be useful for ingestion.
- ▶ Mydriatics, systemic analgesics and topical antibiotics (Sulamyd) may be used for corneal abrasions.
- ▶ There is no effective therapy for sensitised workers.

[Ellenhorn and Barceloux; Medical Toxicology]

**NOTE:** Isocyanates cause airway restriction in naive individuals with the degree of response dependant on the concentration and duration of exposure. They induce smooth muscle contraction which leads to bronchoconstrictive episodes. Acute changes in lung function, such as decreased FEV1, may not represent sensitivity.

[Karol & Jin, Frontiers in Molecular Toxicology, pp 56-61, 1992]

Personnel who work with isocyanates, isocyanate prepolymers or polyisocyanates should have a pre-placement medical examination and periodic examinations thereafter, including a pulmonary function test. Anyone with a medical history of chronic respiratory disease, asthmatic or bronchial attacks, indications of allergic responses, recurrent eczema or sensitisation conditions of the skin should not handle or work with isocyanates. Anyone who develops chronic respiratory distress when working with isocyanates should be removed from exposure and examined by a physician. Further exposure must be avoided if a sensitivity to isocyanates or polyisocyanates has developed.

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ Small quantities of water in contact with hot liquid may react violently with generation of a large volume of rapidly expanding hot sticky semi-solid foam.
- ▶ Presents additional hazard when fire fighting in a confined space.
- ▶ Cooling with flooding quantities of water reduces this risk.
- ▶ Water spray or fog may cause frothing and should be used in large quantities.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

**Special hazards arising from the substrate or mixture****Fire Incompatibility**

- ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

**Advice for firefighters****Fire Fighting**

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear full body protective clothing with breathing apparatus.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ Use water delivered as a fine spray to control fire and cool adjacent area.

**Fire/Explosion Hazard**

-Combustible.  
 -Moderate fire hazard when exposed to heat or flame.  
 -When heated to high temperatures decomposes rapidly generating vapour which pressures and may then rupture containers with release of flammable and highly toxic isocyanate vapour.  
 -Burns with acrid black smoke and poisonous fumes.  
 Combustion products include:  
 carbon dioxide (CO<sub>2</sub>)  
 isocyanates  
 and minor amounts of  
 hydrogen cyanide  
 nitrogen oxides (NO<sub>x</sub>)  
 other pyrolysis products typical of burning organic material.  
 May emit corrosive fumes.

**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****Minor Spills**

- ▶ Remove all ignition sources.
- ▶ Clean up all spills immediately.
- ▶ Avoid breathing vapours and contact with skin and eyes.
- ▶ Control personal contact with the substance, by using protective equipment.

|                     |   |
|---------------------|---|
| <b>Major Spills</b> | <ul style="list-style-type: none"> <li>▶ Avoid contamination with water, alkalis and detergent solutions.</li> <li>▶ Material reacts with water and generates gas, pressurises containers with even drum rupture resulting.</li> <li>▶ <b>DO NOT reseal container if contamination is suspected.</b></li> <li>▶ Open all containers with care.</li> <li>▶ <b>DO NOT touch the spill material</b></li> </ul> <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> </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>     | <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></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> </ul>   |
| <b>Other information</b> | <p>Consider storage under inert gas.<br/>for commercial quantities of isocyanates:<br/>-Isocyanates should be stored in adequately bunded areas. Nothing else should be kept within the same bunding. Pre-polymers need not be segregated. Drums of isocyanates should be stored under cover, out of direct sunlight, protected from rain, protected from physical damage and well away from moisture, acids and alkalis.</p> <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> </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> | <ul style="list-style-type: none"> <li>▶ Avoid cross contamination between the two liquid parts of product (kit).</li> <li>▶ If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur.</li> <li>▶ This excess heat may generate toxic vapour</li> <li>▶ Avoid reaction with oxidising agents</li> </ul> |

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

| Source   | Ingredient                             | Material name               | TWA                    | STEL                   | Peak          | Notes  |
|--|--|-----------------------------|------------------------|------------------------|---------------|--|
| New Zealand Workplace Exposure Standards (WES) | polymeric diphenylmethane diisocyanate | Isocyanates, all, (as -NCO) | 0.02 mg/m <sup>3</sup> | 0.07 mg/m <sup>3</sup> | Not Available | rsen-Dermal sensitiser (rsen)-Respiratory sensitiser<br>Note: These values apply to all isocyanates, including prepolymers, present in the workplace air as vapours, mist or dust. |

#### EMERGENCY LIMITS

| Ingredient                             | Material name   | TEEL-1                 | TEEL-2                | TEEL-3               |
|--|---|------------------------|-----------------------|----------------------|
| polymeric diphenylmethane diisocyanate | Polymethylene polyphenyl isocyanate; (Polymeric diphenylmethane diisocyanate) | 0.15 mg/m <sup>3</sup> | 3.6 mg/m <sup>3</sup> | 22 mg/m <sup>3</sup> |
| Ingredient                             | Original IDLH   | Revised IDLH           |                       |                      |
| polymeric diphenylmethane diisocyanate | Not Available   | Not Available          |                       |                      |

### Exposure controls

|   |  |
|---|--|
| <b>Appropriate engineering controls</b> | <ul style="list-style-type: none"> <li>▶ All processes in which isocyanates are used should be enclosed wherever possible.</li> <li>▶ Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards.</li> <li>▶ If total enclosure of the process is not feasible, local exhaust ventilation may be necessary. Local exhaust ventilation is essential where lower molecular weight isocyanates (such as TDI or HDI) is used or where isocyanate or polyurethane is sprayed.</li> </ul> <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. The basic types of engineering controls are:<br/>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br/>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p> |
|---|--|

|                            |   |
|----------------------------|---|
| <b>Personal protection</b> |  |
|----------------------------|---|

|                                |  |
|--------------------------------|--|
| <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.</li> </ul>  |
| <b>Skin protection</b>         | See Hand protection below  |
| <b>Hands/feet protection</b>   | <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.</p> <ul style="list-style-type: none"> <li>▶ Do NOT wear natural rubber (latex gloves).</li> <li>▶ Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.</li> <li>▶ Protective gloves and overalls should be worn as specified in the appropriate national standard.</li> <li>▶ Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.</li> <li>▶ NOTE: Natural rubber, neoprene, PVC can be affected by isocyanates</li> <li>▶ <b>DO NOT use skin cream unless necessary and then use only minimum amount.</b></li> <li>▶ Isocyanate vapour may be absorbed into skin cream and this increases hazard.</li> </ul> <p>Avoid contact with moisture.</p> |
| <b>Body protection</b>         | See Other protection below   |
| <b>Other protection</b>        | <p>All employees working with isocyanates must be informed of the hazards from exposure to the contaminant and the precautions necessary to prevent damage to their health. They should be made aware of the need to carry out their work so that as little contamination as possible is produced, and of the importance of the proper use of all safeguards against exposure to themselves and their fellow workers. Adequate training, both in the proper execution of the task and in the use of all associated engineering controls, as well as of any personal protective equipment, is essential.</p> <p>Employees exposed to contamination hazards should be educated in the need for, and proper use of, facilities, clothing and equipment and thereby maintain a high standard of personal cleanliness.</p> <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>   |

### Respiratory protection

Full face respirator with supplied air.

- ▶ 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.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

For spraying or operations which might generate aerosols:

Full face respirator with supplied air.

- ▶ In certain circumstances, personal protection of the individual employee is necessary. Personal protective devices should be regarded as being supplementary to substitution and engineering control and should not be used in preference to them as they do nothing to eliminate the hazard.
- ▶ However, in some situations, minimising exposure to isocyanates by enclosure and ventilation is not possible, and occupational exposure standards may be exceeded, particularly during on-site mixing of paints, spray-painting, foaming and maintenance of machine and ventilation systems. In these situations, air-line respirators or self-contained breathing apparatus complying with the appropriate national standard must be used.
- ▶ **Organic vapour respirators with particulate pre-filters and powered, air-purifying respirators are NOT suitable.**
- ▶ Personal protective equipment must be appropriately selected, individually fitted and workers trained in their correct use and maintenance. Personal protective equipment must be regularly checked and maintained to ensure that the worker is being protected.
- ▶ Air-line respirators or self-contained breathing apparatus complying with the appropriate national standard should be used during the clean-up of spills and the repair or clean-up of contaminated equipment and similar situations which cause emergency exposures to hazardous atmospheric concentrations of isocyanate.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Dark amber coloured liquid with mild stuffy odour; reacts with water. |  |                |
| <b>Physical state</b>                               | Liquid  | <b>Relative density (Water = 1)</b>            | 1.2            |
| <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>          | >300           |
| <b>pH (as supplied)</b>                             | Not Available   | <b>Decomposition temperature</b>               | 329            |
| <b>Melting point / freezing point (°C)</b>          | -24 (freezing pt.)  | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | 200   | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | >205  | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Available   | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Applicable  | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Available   | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |
| <b>Lower Explosive Limit (%)</b>                    | Not Available   | <b>Volatile Component (%vol)</b>               | Not Available  |

Continued...

|                          |            |                       |               |
|--------------------------|------------|-----------------------|---------------|
| Vapour pressure (kPa)    | Negligible | Gas group             | Not Available |
| Solubility in water      | Reacts     | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | 8.6 @20C   | 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> <li>▶ Presence of elevated temperatures.</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      | The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure.   |
| Ingestion    | Accidental ingestion of the material may be seriously damaging to the health of the individual; animal experiments indicate that ingestion of less than 40 gram may be fatal.  |
| Skin Contact | This material can cause inflammation of the skin on contact in some persons.<br>The material may accentuate any pre-existing dermatitis condition<br>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>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.   |
| Eye          | This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.   |
| Chronic      | There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.<br>Harmful: danger of serious damage to health by prolonged exposure through inhalation.<br>Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia. |

|  |  |                             |
|--|--|-----------------------------|
| ARDEX R 74 PU Part B                   | TOXICITY   | IRRITATION                  |
|  | Inhalation (None) LC50: 11 mg/l/4h (vapour)*[2]  | Not Available               |
| polymeric diphenylmethane diisocyanate | TOXICITY   | IRRITATION                  |
|  | Dermal (rabbit) LD50: >9400 mg/kg[2]   | Eye (rabbit): 100 mg - mild |
|  | Inhalation (rat) LC50: 0.49 mg/l/4h[2]   |                             |
|  | Oral (rat) LD50: >2000 mg/kg[1]  |                             |
| <b>Legend:</b>                         | 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 |                             |

|  |  |
|--|--|
| POLYMERIC DIPHENYLMETHANE DIISOCYANATE | product  |
|  | <p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.</p> <p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.</p> |

|  |  |
|--|--|
|  | <p>Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p> <p>Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. This group of compounds has therefore been classified as cancer-causing.</p> <p>The substance is classified by IARC as Group 3:<br/> <b>NOT</b> classifiable as to its carcinogenicity to humans.<br/> Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> |
|--|--|

|                                   |   |                          |   |
|-----------------------------------|---|--------------------------|---|
| Acute Toxicity                    | ✓ | Carcinogenicity          | ✗ |
| Skin Irritation/Corrosion         | ✓ | Reproductivity           | ✗ |
| Serious Eye Damage/Irritation     | ✓ | STOT - Single Exposure   | ✓ |
| Respiratory or Skin sensitisation | ✗ | STOT - Repeated Exposure | ✓ |
| Mutagenicity                      | ✗ | Aspiration Hazard        | ✗ |

Legend: ✗ – Data either not available or does not fill the criteria for classification  
✓ – Data available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

| ARDEX R 74 PU Part B | ENDPOINT      | TEST DURATION (HR) | SPECIES       | VALUE         | SOURCE        |
|----------------------|---------------|--------------------|---------------|---------------|---------------|
|                      | Not Available | Not Available      | Not Available | Not Available | Not Available |

| polymeric diphenylmethane diisocyanate | ENDPOINT | TEST DURATION (HR) | SPECIES                       | VALUE      | SOURCE |
|--|----------|--------------------|-------------------------------|------------|--------|
|  | LC50     | 96                 | Fish                          | >1-mg/L    | 2      |
|  | EC50     | 72                 | Algae or other aquatic plants | >1-640mg/L | 2      |

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - 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

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil               | Persistence: Air                      |
|------------|---------------------------------------|---------------------------------------|
|            | No Data available for all ingredients | No Data available for all ingredients |

### Bioaccumulative potential

| Ingredient | Bioaccumulation                       |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

### Mobility in soil

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

## 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> <p>Otherwise:</p> <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 puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ <b>DO NOT recycle spilled material.</b></li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> <li>▶ Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal.</li> <li>▶ <b>DO NOT seal or stopper drums being decontaminated as CO2 gas is generated and may pressurise containers.</b></li> </ul> |
|------------------------------|--|

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

**Disposal Requirements**

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

**SECTION 14 TRANSPORT INFORMATION****Labels Required**

|                         |                |
|-------------------------|----------------|
| <b>Marine Pollutant</b> | NO             |
| <b>HAZCHEM</b>          | Not Applicable |

**Land transport (UN): 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**

This substance is to be managed using the conditions specified in an applicable Group Standard

| HSR Number | Group Standard  |
|------------|---|
| HSR002536  | Gas Under Pressure Mixtures (Toxic [6.1]) Group Standard 2017                       |
| HSR002596  | Laboratory Chemicals and Reagent Kits Group Standard 2017                           |
| HSR002593  | Industrial and Institutional Cleaning Products (Toxic [6.1]) Group Standard 2017    |
| HSR002645  | Polymers (Toxic [6.1]) Group Standard 2017  |
| HSR002614  | Metal Industry Products (Toxic [6.1]) Group Standard 2017                           |
| HSR002508  | Additives, Process Chemicals and Raw Materials (Toxic [6.1]) Group Standard 2017    |
| HSR002579  | Food Additives and Fragrance Materials (Toxic [6.1]) Group Standard 2017            |
| HSR100425  | Pharmaceutical Active Ingredients Group Standard 2017                               |
| HSR002685  | Water Treatment Chemicals (Toxic [6.1]) Group Standard 2017                         |
| HSR002675  | Surface Coatings and Colourants (Toxic [6.1]) Group Standard 2017                   |
| HSR002654  | Solvents (Toxic [6.1]) Group Standard 2017  |
| HSR002550  | Corrosion Inhibitors (Toxic [6.1]) Group Standard 2017                              |
| HSR100757  | Veterinary Medicine (Limited Pack Size, Finished Dose) Standard 2017                |
| HSR100758  | Veterinary Medicines (Non-dispersive Closed System Application) Group Standard 2017 |
| HSR002625  | N.O.S. (Toxic [6.1, 6.7]) Group Standard 2017                                       |

**POLYMERIC DIPHENYLMETHANE DIISOCYANATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

|   |   |
|---|---|
| International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs | New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data |
| New Zealand Approved Hazardous Substances with controls                                       | New Zealand Inventory of Chemicals (NZIoC)  |
| New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals   | New Zealand Workplace Exposure Standards (WES)  |

**Hazardous Substance Location**

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Hazard Class   | Quantity beyond which controls apply for closed containers | Quantity beyond which controls apply when use occurring in open containers |
|----------------|--|--|
| Not Applicable | Not Applicable   | Not Applicable   |

**Certified Handler**

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Class of substance  | Quantities   |
|---|--------------|
| 6.1A, 6.1B, 6.1C (except for propellant powders of classes 1.1C (UN 0160) and 1.3C (UN 0161)) | Any quantity |

Refer Group Standards for further information

**Tracking Requirements**

Subject to tracking according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

- Refer to the regulation for more information



**National Inventory Status**

| National Inventory            | Status  |
|-------------------------------|---|
| Australia - AICS              | Yes   |
| Canada - DSL                  | Yes   |
| Canada - NDSL                 | No (polymeric diphenylmethane diisocyanate)   |
| China - IECSC                 | Yes   |
| Europe - EINEC / ELINCS / NLP | No (polymeric diphenylmethane diisocyanate)   |
| Japan - ENCS                  | Yes   |
| Korea - KECI                  | Yes   |
| New Zealand - NZIoC           | Yes   |
| Philippines - PICCS           | Yes   |
| USA - TSCA                    | Yes   |
| Taiwan - TCSI                 | Yes   |
| Mexico - INSQ                 | Yes   |
| Vietnam - NCI                 | Yes   |
| Russia - ARIPS                | Yes   |
| <b>Legend:</b>                | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets) |

**SECTION 16 OTHER INFORMATION**

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 01/11/2019 |
| <b>Initial Date</b>  | 28/08/2019 |

**SDS Version Summary**

| Version | Issue Date | Sections Updated   |
|---------|------------|--|
| 3.1.1.1 | 01/11/2019 | One-off system update. NOTE: This may or may not change the GHS classification |

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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

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