



## Ardex RA 88 Plus - Part A

Ardex (Ardex Australia)

Chemwatch: 5361-44

Version No: 5.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 15/11/2019

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S.GHS.AUS.EN

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

#### Product Identifier

|                               |   |
|-------------------------------|---|
| Product name                  | Ardex RA 88 Plus - Part A   |
| Synonyms                      | Not Available   |
| Proper shipping name          | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains bisphenol A/ diglycidyl ether resin, liquid) |
| Other means of identification | Not Available   |

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

|                          |                        |
|--------------------------|------------------------|
| Relevant identified uses | General purpose epoxy. |
|--------------------------|------------------------|

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

|                         |   |
|-------------------------|---|
| Registered company name | Ardex (Ardex Australia)                       |
| Address                 | 20 Powers Road Seven Hills NSW 2147 Australia |
| Telephone               | 1800 224 070                                  |
| Fax                     | 1300 780 102                                  |
| Website                 | Not Available                                 |
| Email                   | Not Available                                 |

#### Emergency telephone number

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Association / Organisation        | Ardex (Ardex Australia)         |
| Emergency telephone numbers       | 1800 224 070 (Mon-Fri, 9am-5pm) |
| Other emergency telephone numbers | Not Available                   |

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

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

#### CHEMWATCH HAZARD RATINGS

|              | Min | Max |              |
|--------------|-----|-----|--------------|
| Flammability | 1   | 1   |              |
| Toxicity     | 0   | 0   | 0 = Minimum  |
| Body Contact | 3   | 3   | 1 = Low      |
| Reactivity   | 1   | 1   | 2 = Moderate |
| Chronic      | 3   | 3   | 3 = High     |
|              |     |     | 4 = Extreme  |

|                    |  |
|--------------------|--|
| Poisons Schedule   | S5   |
| Classification [1] | Skin Corrosion/Irritation Category 2, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Germ cell mutagenicity Category 2, Carcinogenicity Category 1A, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Chronic Aquatic Hazard Category 2 |
| Legend:            | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI  |

#### Label elements

Continued...

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|                     |   |
|---------------------|---|
| Hazard pictogram(s) |  |
|---------------------|---|

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

**Hazard statement(s)**

|             |  |
|-------------|--|
| <b>H315</b> | Causes skin irritation.                          |
| <b>H318</b> | Causes serious eye damage.                       |
| <b>H317</b> | May cause an allergic skin reaction.             |
| <b>H341</b> | Suspected of causing genetic defects.            |
| <b>H350</b> | May cause cancer.                                |
| <b>H335</b> | May cause respiratory irritation.                |
| <b>H411</b> | Toxic to aquatic life with long lasting effects. |

**Precautionary statement(s) Prevention**

|             |  |
|-------------|--|
| <b>P201</b> | Obtain special instructions 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. |
| <b>P281</b> | Use personal protective equipment as required.                             |

**Precautionary statement(s) Response**

|                       |  |
|-----------------------|--|
| <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>P308+P313</b>      | IF exposed or concerned: Get medical advice/attention.   |
| <b>P310</b>           | Immediately call a POISON CENTER or doctor/physician.  |
| <b>P321</b>           | Specific treatment (see advice on this label).   |

**Precautionary statement(s) Storage**

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

**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   |
|---------------|-----------|--|
| 25085-99-8    | 40-70     | <u>bisphenol A/ diglycidyl ether resin, liquid</u> |
| Not Available | 13-37     | ingredients, proprietary                           |
| 1317-65-3     | 10-30     | <u>limestone</u>                                   |
| 13463-67-7    | 0-3       | <u>titanium dioxide</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 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> </ul>   |

|                  |  |
|------------------|--|
|                  | <ul style="list-style-type: none"> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>   |
| <b>Ingestion</b> | <ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul> |

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

Treat symptomatically.

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

- ▶ Alcohol stable foam.
  - ▶ Dry chemical powder.
  - ▶ BCF (where regulations permit).
  - ▶ Carbon dioxide.
- Do not** use water jets.

**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 breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> </ul>   |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> </ul> <p>Combustion products include:<br/>carbon monoxide (CO)<br/>carbon dioxide (CO<sub>2</sub>)<br/>metal oxides<br/>other pyrolysis products typical of burning organic material.</p> |
| <b>HAZCHEM</b>               | 2Z   |

**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>▶ Clean up waste regularly and abnormal spills immediately.</li> <li>▶ Avoid breathing dust and contact with skin and eyes.</li> <li>▶ Wear protective clothing, gloves, safety glasses and dust respirator.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> </ul> <p>Environmental hazard - contain spillage.</p>            |
| <b>Major Spills</b> | <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 full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by all means available, spillage from entering drains or water courses.</li> </ul> <p>Environmental hazard - contain spillage.</p> |

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>▶ 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>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> </ul> |
|----------------------|---|

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|                          |   |
|--------------------------|---|
|                          | <ul style="list-style-type: none"> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</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>▶ Store in a cool, dry area protected from environmental extremes.</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>▶ Polyethylene or polypropylene container.</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 amines, mercaptans, strong acids and oxidising agents</li> <li>▶ Avoid strong bases.</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 | limestone        | Calcium carbonate | 10 mg/m3 | Not Available | Not Available | (a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica. |
| Australia Exposure Standards | titanium dioxide | Titanium dioxide  | 10 mg/m3 | Not Available | Not Available | (a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica. |

**EMERGENCY LIMITS**

| Ingredient                                  | Material name                                       | TEEL-1   | TEEL-2    | TEEL-3      |
|---|---|----------|-----------|-------------|
| bisphenol A/ diglycidyl ether resin, liquid | Epoxy resin includes EPON 1001, 1007, 820, ERL-2795 | 90 mg/m3 | 990 mg/m3 | 5,900 mg/m3 |
| limestone                                   | Limestone; (Calcium carbonate; Dolomite)            | 45 mg/m3 | 500 mg/m3 | 3,000 mg/m3 |
| limestone                                   | Carbonic acid, calcium salt                         | 45 mg/m3 | 210 mg/m3 | 1,300 mg/m3 |
| titanium dioxide                            | Titanium oxide; (Titanium dioxide)                  | 30 mg/m3 | 330 mg/m3 | 2,000 mg/m3 |

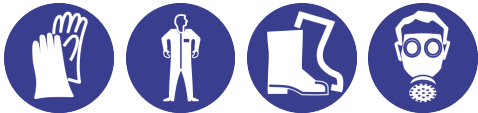
| Ingredient                                  | Original IDLH | Revised IDLH  |
|---|---------------|---------------|
| bisphenol A/ diglycidyl ether resin, liquid | Not Available | Not Available |
| limestone                                   | Not Available | Not Available |
| titanium dioxide                            | 5,000 mg/m3   | Not Available |

**OCCUPATIONAL EXPOSURE BANDING**

| Ingredient                                  | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|---|-----------------------------------|----------------------------------|
| bisphenol A/ diglycidyl ether resin, liquid | E                                 | ≤ 0.1 ppm                        |

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**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:<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</p>                                      |

|                         |  |
|-------------------------|--|
|                         | <p>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> <p>When handling liquid-grade epoxy resins wear chemically protective gloves, boots and aprons.</p> <p>The performance, based on breakthrough times, of:</p> <ul style="list-style-type: none"> <li>·Ethyl Vinyl Alcohol (EVAL laminate) is generally excellent</li> <li>·Butyl Rubber ranges from excellent to good</li> <li>·Nitrile Butyl Rubber (NBR) from excellent to fair.</li> <li>·Neoprene from excellent to fair</li> <li>·Polyvinyl (PVC) from excellent to poor</li> </ul> <p>As defined in ASTM F-739-96</p> <ul style="list-style-type: none"> <li>·Excellent breakthrough time &gt; 480 min</li> <li>·Good breakthrough time &gt; 20 min</li> <li>·Fair breakthrough time &lt; 20 min</li> <li>·Poor glove material degradation</li> </ul> <p>Gloves should be tested against each resin system prior to making a selection of the most suitable type. Systems include both the resin and any hardener, individually and collectively)</p> <p><b>DO NOT</b> use cotton or leather (which absorb and concentrate the resin), natural rubber (latex), medical or polyethylene gloves (which absorb the resin).</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> <li>▶ nitrile rubber.</li> <li>▶ butyl rubber.</li> </ul>  |
| <b>Body protection</b>  | See Other protection below   |
| <b>Other protection</b> | <ul style="list-style-type: none"> <li>▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]</li> <li>▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]</li> <li>▶ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.</li> <li>▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.</li> <li>▶ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.</li> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> </ul> |

### Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator  |
|------------------------------------|----------------------|----------------------|-------------------------|
| up to 10 x ES                      | A-AUS P2             | -                    | A-PAPR-AUS / Class 1 P2 |
| up to 50 x ES                      | -                    | A-AUS / Class 1 P2   | -                       |
| up to 100 x ES                     | -                    | A-2 P2               | A-PAPR-2 P2 ^           |

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(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 degC)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                         |                                  |  |               |
|-------------------------|----------------------------------|--|---------------|
| <b>Appearance</b>       | White solid; insoluble in water. |  |               |
| <b>Physical state</b>   | Solid                            | <b>Relative density (Water = 1)</b>            | Not Available |
| <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 Applicable                   | <b>Decomposition temperature</b>               | Not Available |

|  |               |                                  |                |
|--|---------------|----------------------------------|----------------|
| Melting point / freezing point (°C)          | Not Available | Viscosity (cSt)                  | Not Available  |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol)         | Not Applicable |
| Flash point (°C)                             | Not Available | Taste                            | Not Available  |
| Evaporation rate                             | Not Available | Explosive properties             | Not Available  |
| Flammability                                 | Not Available | Oxidising properties             | Not Available  |
| Upper Explosive Limit (%)                    | Not Available | Surface Tension (dyn/cm or mN/m) | Not Applicable |
| Lower Explosive Limit (%)                    | Not Available | Volatile Component (%vol)        | Not Available  |
| Vapour pressure (kPa)                        | Not Available | Gas group                        | Not Available  |
| Solubility in water                          | Immiscible    | pH as a solution (1%)            | Not Applicable |
| 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      | <p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p>   |
| Ingestion    | The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.   |
| Skin Contact | <p>The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p> <p>The material may accentuate any pre-existing dermatitis condition</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          | If applied to the eyes, this material causes severe eye damage.  |
| Chronic      | <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>There is sufficient evidence to suggest that this material directly causes cancer in humans.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Based on experience with similar materials, there is a possibility that exposure to the material may reduce fertility in humans at levels which do not cause other toxic effects.</p> <p>There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> |

|   |  |   |
|---|--|---|
| Ardex RA 88 Plus - Part A                   | TOXICITY   | IRRITATION  |
|   | Not Available  | Not Available   |
| bisphenol A/ diglycidyl ether resin, liquid | TOXICITY   | IRRITATION  |
|   | dermal (rat) LD50: >1200 mg/kg <sup>[2]</sup><br>Oral (rat) LD50: >1000 mg/kg <sup>[2]</sup> | Eye (rabbit): 100mg - Mild  |
| limestone                                   | TOXICITY   | IRRITATION  |
|   | Oral (rat) LD50: 6450 mg/kg <sup>[2]</sup>   | Eye: no adverse effect observed (not irritating) <sup>[1]</sup><br>Skin (rabbit): 500 mg/24h-moderate |
|   |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>                                      |

**Ardex RA 88 Plus - Part A**

|                         |   |   |
|-------------------------|---|---|
| <b>titanium dioxide</b> | <b>TOXICITY</b>                                     | <b>IRRITATION</b>   |
|                         | dermal (hamster) LD50: >=10000 mg/kg <sup>[2]</sup> | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>   |
|                         | Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>         | Skin (human): 0.3 mg /3D (int)-mild *<br>Skin: no adverse effect observed (not irritating) <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

|  |   |
|--|---|
| <b>BISPHENOL A/ DIGLYCIDYL ETHER RESIN, LIQUID</b> | <p>Foetotoxicity has been observed in animal studies Oral (rabbit, female) NOEL 180 mg/kg (teratogenicity); NOEL (maternal 60 mg/kg)</p> <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>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.</p> <p>The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics</p> <p>Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity. Several derivatives of BPA exhibited significant thyroid hormonal activity towards rat pituitary cell line GH3, which releases growth hormone in a thyroid hormone-dependent manner. However, BPA and several other derivatives did not show such activity.</p> <p>The substance is classified by IARC as Group 3:<br/><b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> <p>Animal testing over 13 weeks showed bisphenol A diglycidyl ether (BADGE) caused mild to moderate, chronic, inflammation of the skin.</p> <p>Reproductive and Developmental Toxicity: Animal testing showed BADGE given over several months caused reduction in body weight but had no reproductive effects.</p> <p>Cancer-causing potential: It has been concluded that bisphenol A diglycidyl ether cannot be classified with respect to its cancer-causing potential in humans.</p> <p>Genetic toxicity: Laboratory tests on genetic toxicity of BADGE have so far been negative.</p> |
| <b>LIMESTONE</b>                                   | <p>Eye (rabbit) 0.75: mg/24h - No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>   |
| <b>TITANIUM DIOXIDE</b>                            | <p>* IUCLID</p> <p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.</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>Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. It penetrated only the outermost layer of the skin, suggesting that healthy skin may be an effective barrier.</p> <p>No significant acute toxicological data identified in literature search.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p><b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p>  |
| <b>LIMESTONE &amp; TITANIUM DIOXIDE</b>            | <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p>   |

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

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

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity**

|  | ENDPOINT                         | TEST DURATION (HR) | SPECIES                       | VALUE         | SOURCE        |
|--|----------------------------------|--------------------|-------------------------------|---------------|---------------|
|  | <b>Ardex RA 88 Plus - Part A</b> | Not Available      | Not Available                 | Not Available | Not Available |
| <b>bisphenol A/ diglycidyl ether resin, liquid</b> | ENDPOINT                         | TEST DURATION (HR) | SPECIES                       | VALUE         | SOURCE        |
|  | EC50                             | 48                 | Crustacea                     | ca.2mg/L      | 2             |
| <b>limestone</b>                                   | ENDPOINT                         | TEST DURATION (HR) | SPECIES                       | VALUE         | SOURCE        |
|  | LC50                             | 96                 | Fish                          | >56000mg/L    | 4             |
|  | EC50                             | 72                 | Algae or other aquatic plants | >14mg/L       | 2             |
|  | EC10                             | 72                 | Algae or other aquatic plants | >14mg/L       | 2             |
|  | NOEC                             | 72                 | Algae or other aquatic plants | 14mg/L        | 2             |

Continued...

|                  | ENDPOINT | TEST DURATION (HR) | SPECIES                       | VALUE     | SOURCE |
|------------------|----------|--------------------|-------------------------------|-----------|--------|
| titanium dioxide | LC50     | 96                 | Fish                          | >1-mg/L   | 2      |
|                  | EC50     | 48                 | Crustacea                     | >1-mg/L   | 2      |
|                  | EC50     | 72                 | Algae or other aquatic plants | 5.83mg/L  | 4      |
|                  | NOEC     | 336                | Fish                          | 0.089mg/L | 4      |

**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

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

#### Persistence and degradability

| Ingredient                                  | Persistence: Water/Soil | Persistence: Air |
|---|-------------------------|------------------|
| bisphenol A/ diglycidyl ether resin, liquid | HIGH                    | HIGH             |
| titanium dioxide                            | HIGH                    | HIGH             |

#### Bioaccumulative potential

| Ingredient                                  | Bioaccumulation       |
|---|-----------------------|
| bisphenol A/ diglycidyl ether resin, liquid | LOW (LogKOW = 2.6835) |
| titanium dioxide                            | LOW (BCF = 10)        |

#### Mobility in soil

| Ingredient                                  | Mobility          |
|---|-------------------|
| bisphenol A/ diglycidyl ether resin, liquid | LOW (KOC = 51.43) |
| titanium dioxide                            | LOW (KOC = 23.74) |



### 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> <li>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 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> </ul> </li> </ul> |
|------------------------------|--|

### SECTION 14 TRANSPORT INFORMATION

#### Labels Required

|                  |   |
|------------------|---|
|                  |  |
| Marine Pollutant |  |
| HAZCHEM          | 2Z  |

#### Land transport (ADG)

|                            |   |
|----------------------------|---|
| UN number                  | 3077  |
| UN proper shipping name    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains bisphenol A/ diglycidyl ether resin, liquid) |
| Transport hazard class(es) | Class : 9<br>Subrisk : Not Applicable   |
| Packing group              | III   |
| Environmental hazard       | Environmentally hazardous   |



|                                     |                    |                      |
|-------------------------------------|--------------------|----------------------|
| <b>Special precautions for user</b> | Special provisions | 274 331 335 375 AU01 |
|                                     | Limited quantity   | 5 kg                 |

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in;

(a) packagings;

(b) IBCs; or

(c) any other receptacle not exceeding 500 kg(L).

- Australian Special Provisions (SP AU01) - ADG Code 7th Ed.

#### Air transport (ICAO-IATA / DGR)

|                                     |   |                    |
|-------------------------------------|---|--------------------|
| <b>UN number</b>                    | 3077  |                    |
| <b>UN proper shipping name</b>      | Environmentally hazardous substance, solid, n.o.s. * (contains bisphenol A/ diglycidyl ether resin, liquid) |                    |
| <b>Transport hazard class(es)</b>   | ICAO/IATA Class   | 9                  |
|                                     | ICAO / IATA Subrisk   | Not Applicable     |
|                                     | ERG Code  | 9L                 |
| <b>Packing group</b>                | III   |                    |
| <b>Environmental hazard</b>         | Environmentally hazardous   |                    |
| <b>Special precautions for user</b> | Special provisions  | A97 A158 A179 A197 |
|                                     | Cargo Only Packing Instructions   | 956                |
|                                     | Cargo Only Maximum Qty / Pack   | 400 kg             |
|                                     | Passenger and Cargo Packing Instructions  | 956                |
|                                     | Passenger and Cargo Maximum Qty / Pack  | 400 kg             |
|                                     | Passenger and Cargo Limited Quantity Packing Instructions   | Y956               |
|                                     | Passenger and Cargo Limited Maximum Qty / Pack  | 30 kg G            |

#### Sea transport (IMDG-Code / GGVSee)

|                                     |   |                     |
|-------------------------------------|---|---------------------|
| <b>UN number</b>                    | 3077  |                     |
| <b>UN proper shipping name</b>      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains bisphenol A/ diglycidyl ether resin, liquid) |                     |
| <b>Transport hazard class(es)</b>   | IMDG Class  | 9                   |
|                                     | IMDG Subrisk  | Not Applicable      |
| <b>Packing group</b>                | III   |                     |
| <b>Environmental hazard</b>         | Marine Pollutant  |                     |
| <b>Special precautions for user</b> | EMS Number  | F-A , S-F           |
|                                     | Special provisions  | 274 335 966 967 969 |
|                                     | Limited Quantities  | 5 kg                |

#### 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

##### BIPHENOL A/ DIGLYCIDYL ETHER RESIN, LIQUID IS FOUND ON THE FOLLOWING REGULATORY LISTS

|   |   |
|---|---|
| Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List                            | Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5 |
| Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes                  | International Air Transport Association (IATA) Dangerous Goods Regulations                  |
| Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals                | International FOSFA List of Banned Immediate Previous Cargoes                               |
| Australia Inventory of Chemical Substances (AICS)   | International Maritime Dangerous Goods Requirements (IMDG Code)                             |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2 | United Nations Recommendations on the Transport of Dangerous Goods Model Regulations        |

##### LIMESTONE IS FOUND ON THE FOLLOWING REGULATORY LISTS

|   |   |
|---|---|
| Australia Exposure Standards  | Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6 |
| Australia Inventory of Chemical Substances (AICS)   | GESAMP/EHS Composite List - GESAMP Hazard Profiles  |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5 | IMO IBC Code Chapter 18: List of products to which the Code does not apply                  |

##### TITANIUM DIOXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

|  |   |
|--|---|
| Australia Exposure Standards                             | IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk   |
| Australia Inventory of Chemical Substances (AICS)        | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs                     |
| GESAMP/EHS Composite List - GESAMP Hazard Profiles       | International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS) |
| IMO IBC Code Chapter 17: Summary of minimum requirements |   |

**National Inventory Status**

| National Inventory            | Status   |
|-------------------------------|--|
| Australia - AICS              | Yes  |
| Canada - DSL                  | Yes  |
| Canada - NDSL                 | No (bisphenol A/ diglycidyl ether resin, liquid)   |
| China - IECSC                 | Yes  |
| Europe - EINEC / ELINCS / NLP | Yes  |
| 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> | 15/11/2019 |
| <b>Initial Date</b>  | 31/07/2019 |

**SDS Version Summary**

| Version | Issue Date | Sections Updated  |
|---------|------------|---|
| 4.1.1.1 | 01/11/2019 | One-off system update. NOTE: This may or may not change the GHS classification  |
| 5.1.1.1 | 15/11/2019 | Acute Health (inhaled), Appearance, Chronic Health, Classification, Disposal, Fire Fighter (fire/explosion hazard), Handling Procedure, Personal Protection (Respirator), Personal Protection (hands/feet), Physical Properties, Spills (minor), Storage (storage requirement), Storage (suitable container), Transport Information |

**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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