



ARDEX BRP 30 EP Part A – Resin

Ardex (Ardex NZ)

Chemwatch: 82-9246
Version No: 4.1.1.1
Safety Data Sheet according to HSNO Regulations

Chemwatch Hazard Alert Code: 3

Issue Date: 01/11/2019
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S.GHS.NZL.EN

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

Product Identifier

| | |
|-------------------------------|---|
| Product name | ARDEX BRP 30 EP Part A – Resin |
| Synonyms | Not Available |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains bisphenol A/ diglycidyl ether resin, liquid and bisphenol F diglycidyl ether copolymer) |
| Other means of identification | Not Available |

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

| | |
|--------------------------|-------------------------------------|
| Relevant identified uses | Part A of 2 component epoxy primer. |
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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. Classified as Dangerous Goods for transport purposes.

CHEMWATCH HAZARD RATINGS

| | Min | Max |
|--------------|-----|-----|
| Flammability | 1 | 2 |
| Toxicity | 0 | 1 |
| Body Contact | 3 | 4 |
| Reactivity | 1 | 2 |
| Chronic | 2 | 3 |

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

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|---|---|
| Classification [1] | Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Skin Sensitizer Category 1, Germ cell mutagenicity Category 2, Specific target organ toxicity - single exposure Category 2, Specific target organ toxicity - repeated exposure Category 2, Chronic Aquatic Hazard Category 2 |
| 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 | 6.3A, 6.4A, 6.5B (contact), 6.6B, 6.9B, 9.1B |

Label elements

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| Hazard pictogram(s) |  |
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| SIGNAL WORD | WARNING |
|-------------|----------------|

Hazard statement(s)

| | |
|-------------|--|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H317 | May cause an allergic skin reaction. |
| H341 | Suspected of causing genetic defects. |
| H371 | May cause damage to organs. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary statement(s) Prevention

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|-------------|--|
| P201 | Obtain special instructions before use. |
| P260 | Do not breathe mist/vapours/spray. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P270 | Do not eat, drink or smoke when using this product. |

Precautionary statement(s) Response

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| P321 | Specific treatment (see advice on this label). |
| P302+P352 | IF ON SKIN: Wash with plenty of water and soap. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P311 | IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider. |

Precautionary statement(s) Storage

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| P405 | Store locked up. |
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Precautionary statement(s) Disposal

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| P501 | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 1317-65-3 | 25-50 | <u>limestone</u> |
| 25068-38-6 | 10-25 | <u>bisphenol A/ diglycidyl ether resin, liquid</u> |
| 28064-14-4 | 10-25 | <u>bisphenol F diglycidyl ether copolymer</u> |
| 26761-45-5 | <10 | <u>glycidyl neodecanoate</u> |
| 13463-67-7 | <5 | <u>titanium dioxide</u> |
| Not Available | <1 | Ingredients determined not to be hazardous |

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

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| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ 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. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. |

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| | <ul style="list-style-type: none"> Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. |
| Ingestion | <ul style="list-style-type: none"> ▶ 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

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES**Extinguishing media**

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

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| Fire Incompatibility | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
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Advice for firefighters

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| Fire Fighting | <ul style="list-style-type: none"> ▶ 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 | <ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). <p>Combustion products include: carbon dioxide (CO₂) aldehydes other pyrolysis products typical of burning organic material.</p> |

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

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| Minor Spills | <ul style="list-style-type: none"> ·In the event of a spill of a reactive diluent, the focus is on containing the spill to prevent contamination of soil and surface or ground water. ·If irritating vapors are present, an approved air-purifying respirator with organic vapor canister is recommended for cleaning up spills and leaks. ·For small spills, reactive diluents should be absorbed with sand. <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| Major Spills | <p>Environmental hazard - contain spillage.</p> <p>Industrial spills or releases of reactive diluents are infrequent and generally contained. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements.</p> <p>An approved air-purifying respirator with organic-vapor canister is recommended for emergency work.</p> <p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. |

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

SECTION 7 HANDLING AND STORAGE**Precautions for safe handling**

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| Safe handling | <ul style="list-style-type: none"> ▶ DO NOT allow clothing wet with material to stay in contact with skin ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. |
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| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. |
|--------------------------|--|

Conditions for safe storage, including any incompatibilities

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| Suitable container | <ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Avoid cross contamination between the two liquid parts of product (kit). ▶ 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. ▶ This excess heat may generate toxic vapour ▶ Avoid reaction with amines, mercaptans, strong acids and oxidising agents |

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) | limestone | Marble (Calcium carbonate) | 10 mg/m3 | Not Available | Not Available | Not Available |
| New Zealand Workplace Exposure Standards (WES) | limestone | Limestone (Calcium carbonate) | 10 mg/m3 | Not Available | Not Available | Not Available |
| New Zealand Workplace Exposure Standards (WES) | limestone | Calcium carbonate | 10 mg/m3 | Not Available | Not Available | Not Available |
| New Zealand Workplace Exposure Standards (WES) | titanium dioxide | Titanium dioxide | 10 mg/m3 | Not Available | Not Available | Not Available |

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|----------|-----------|-------------|
| limestone | Carbonic acid, calcium salt | 45 mg/m3 | 210 mg/m3 | 1,300 mg/m3 |
| 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 |
| bisphenol F diglycidyl ether copolymer | Phenol, polymer with formaldehyde, oxiranylmethyl ether | 30 mg/m3 | 330 mg/m3 | 2,000 mg/m3 |
| titanium dioxide | Titanium oxide; (Titanium dioxide) | 30 mg/m3 | 330 mg/m3 | 2,000 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|---|---------------|---------------|
| limestone | Not Available | Not Available |
| bisphenol A/ diglycidyl ether resin, liquid | Not Available | Not Available |
| bisphenol F diglycidyl ether copolymer | Not Available | Not Available |
| glycidyl neodecanoate | 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 |
| bisphenol F diglycidyl ether copolymer | E | ≤ 0.1 ppm |
| glycidyl neodecanoate | 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

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

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| Eye and face protection | <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ 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. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <p>NOTE:</p> <ul style="list-style-type: none"> ▶ 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. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. <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> <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"> ·Ethyl Vinyl Alcohol (EVAL laminate) is generally excellent ·Butyl Rubber ranges from excellent to good ·Nitrile Butyl Rubber (NBR) from excellent to fair. ·Neoprene from excellent to fair ·Polyvinyl (PVC) from excellent to poor <p>As defined in ASTM F-739-96</p> <ul style="list-style-type: none"> ·Excellent breakthrough time > 480 min ·Good breakthrough time > 20 min ·Fair breakthrough time < 20 min ·Poor glove material degradation <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>DO NOT use cotton or leather (which absorb and concentrate the resin), natural rubber (latex), medical or polyethylene gloves (which absorb the resin).</p> |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C apron. ▶ Barrier cream. ▶ Skin cleansing cream. |

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(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ 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

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

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|---|---|--|----------------|
| Appearance | Grey viscous liquid; does not mix with water. | | |
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | Not Available | Decomposition temperature | 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 Available |
| 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 Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

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| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |
| 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

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|--------------|---|
| Inhaled | <p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. In animal testing, exposure to aerosols of reactive diluents (especially o-cresol glycidyl ether, CAS RN:2210-79-9) has been reported to affect the adrenal gland, central nervous system, kidney, liver, ovaries, spleen, testes, thymus and respiratory tract. Inhalation hazard is increased at higher temperatures. Not normally a hazard due to non-volatile nature of product</p> |
| Ingestion | <p>Animal testing showed that a single dose of bisphenol A diglycidyl ether (BADGE) given by mouth, caused an increase in immature sperm. Reactive diluents exhibit a range of ingestion hazards. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. However, swallowing larger amounts may cause injury. Bisphenol A diglycidyl ethers (BADGEs) produce a sensitization dermatitis (skin inflammation) characterized by eczema with blisters and papules, with considerable itching of the back of the hand. This may persist for 10-14 days after withdrawal from exposure and recur immediately on re-exposure. The dermatitis may last longer following each exposure, but is unlikely to become more intense. Lower molecular weight species produce sensitization more readily.</p> |
| 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. Bisphenol A diglycidyl ether (BADGE) may produce contact dermatitis characterized by redness and swelling, with weeping followed by crusting and scaling. A liquid resin with a molecular weight of 350 produced severe skin irritation when applied daily for 4 hours over 20 days. Skin contact with reactive diluents may cause slight to moderate irritation with local redness. Repeated or prolonged skin contact may cause burns. Open cuts, abraded or irritated skin should not be exposed to this material. 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 | <p>If applied to the eyes, this material causes severe eye damage. Eye contact with reactive diluents may cause slight to severe irritation with the possibility of chemical burns or moderate to severe damage to the cornea.</p> |
| Chronic | <p>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. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. 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. Bisphenol A diglycidyl ethers (BADGEs) produce a sensitization dermatitis (skin inflammation) characterized by eczema with blisters and papules, with considerable itching of the back of the hand. This may persist for 10-14 days after withdrawal from exposure and recur immediately on re-exposure. The dermatitis may last longer following each exposure, but is unlikely to become more intense. Lower molecular weight species produce sensitization more readily. For some reactive diluents, prolonged or repeated skin contact may result in absorption of potentially harmful amounts or allergic skin reactions. Exposure to some reactive diluents (notably, neopentylglycol diglycidyl ether, CAS RN: 17557-23-2) has caused cancer in some animal testing. Glycidyl ethers can cause genetic damage and cancer. Bisphenol F, bisphenol A, fluorine-containing bisphenol A (bisphenol AF) and other diphenylalkanes were found to have oestrogen-like effects. Bisphenol F is present in the environment and as a contaminant of food, so humans may therefore be exposed to bisphenol. Testing shows bisphenol F has genetic toxicity as well as the ability to disrupt hormonal balance. Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm.</p> |

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| ARDEX BRP 30 EP Part A – Resin | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| limestone | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 6450 mg/kg ^[2] | Eye: no adverse effect observed (not irritating) ^[1] |
| | | Skin (rabbit): 500 mg/24h-moderate |
| | | Skin: no adverse effect observed (not irritating) ^[1] |

ARDEX BRP 30 EP Part A – Resin

| | | |
|---|---|---|
| bisphenol A/ diglycidyl ether resin, liquid | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >1200 mg/kg ^[2] | Eye (rabbit): 100mg - Mild |
| | Oral (rat) LD50: >1000 mg/kg ^[2] | |
| bisphenol F diglycidyl ether copolymer | TOXICITY | IRRITATION |
| | dermal (rat) LD50: 4000 mg/kg ^[2] | Eyes * (-) (-) Slight irritant |
| | Oral (rat) LD50: 4000 mg/kg ^[2] | Skin * (-) (-) Slight irritant |
| glycidyl neodecanoate | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >4 mg/kg ^[2] | Eye: no adverse effect observed (not irritating) ^[1] |
| | Inhalation (rat) LC50: >0.24 mg/l/4H ^[2] | Skin: no adverse effect observed (not irritating) ^[1] |
| titanium dioxide | TOXICITY | IRRITATION |
| | dermal (hamster) LD50: >=10000 mg/kg ^[2] | Eye: no adverse effect observed (not irritating) ^[1] |
| | Oral (rat) LD50: >2000 mg/kg ^[1] | Skin (human): 0.3 mg /3D (int)-mild * Skin: no adverse effect observed (not irritating) ^[1] |
| 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 | |

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| LIMESTONE | Eye (rabbit) 0.75: mg/24h - No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| BISPHENOL A/ DIGLYCIDYL ETHER RESIN, LIQUID | <p>Foetotoxicity has been observed in animal studies Oral (rabbit, female) NOEL 180 mg/kg (teratogenicity); NOEL (maternal 60 mg/kg)</p> <p>The substance is classified by IARC as Group 3: NOT 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> <p>Immunotoxicity: Animal testing suggests regular injections of diluted BADGE may result in sensitization.</p> <p>Consumer exposure: Consumer exposure to BADGE is almost exclusively from migration of BADGE from can coatings into food. Testing has not found any evidence of hormonal disruption.</p> |
| GLYCIDYL NEODECANOATE | <p>Fatty acid glycidyl esters (GEs) are potential carcinogens, due to the fact that they readily hydrolyze into the free form glycidol (2,3-epoxypropanol) in the gastrointestinal tract, which has been found to induce tumours in various rat tissues. Therefore, significant effort has been devoted to inhibit and eliminate the formation of GEs</p> <p>Exposure to glycidol may also cause central nervous system depression, followed by central nervous system stimulation.</p> <p>Although harmful effects on humans and animals have not been demonstrated, the corresponding hydrolysates, 3-MCPD and glycidol, have been identified as rodent genotoxic carcinogens, ultimately resulting in the formation of kidney tumours (3-MCPD) and tumours at other tissue sites (glycidol). Therefore, 3-MCPD and glycidol have been categorised as "possible human carcinogens" (group 2B) and "probably carcinogenic to humans" (group 2A), respectively, by the International Agency for Research on Cancer (IARC).</p> <p>Diaclyglyceride (DAG) based oils produced by one company were banned from the global market due to "high levels" of GEs.</p> <p>551glycdec</p> <p>For 1,2-butylene oxide (ethyloxirane):</p> <p>In animal testing, ethyloxirane increased the incidence of tumours of the airways in animals exposed via inhalation. However, tumours were not observed in mice chronically exposed via skin. Two structurally related substances, oxirane (ethylene oxide) and methyloxirane (propylene oxide), which are also direct-acting alkylating agents, have been classified as causing cancer.</p> |
| TITANIUM DIOXIDE | <p>* IUCLID</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. There is no substantive data on genetic damage, though cases have been reported in experimental animals.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p> |
| LIMESTONE & TITANIUM DIOXIDE | 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. |
| BISPHENOL A/ DIGLYCIDYL ETHER RESIN, LIQUID & BISPHENOL F DIGLYCIDYL ETHER COPOLYMER & GLYCIDYL NEODECANOATE | 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. |
| BISPHENOL A/ DIGLYCIDYL ETHER RESIN, LIQUID & BISPHENOL F DIGLYCIDYL ETHER COPOLYMER | 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 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. |
| BISPHENOL F DIGLYCIDYL ETHER COPOLYMER & GLYCIDYL NEODECANOATE | Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) share many common characteristics with respect to animal toxicology. One such oxirane is ethyloxirane; data presented here may be taken as representative. |

ARDEX BRP 30 EP Part A – Resin

| | |
|---|--|
| GLYCIDYL NEODECANOATE & TITANIUM DIOXIDE | 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. 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. No significant acute toxicological data identified in literature search. |
|---|--|

| | | | |
|--|---|---------------------------------|---|
| 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 BRP 30 EP Part A – Resin | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---------------|--------------------|-------------------------------|---------------|---------------|
| | Not Available | Not Available | Not Available | Not Available | Not Available |
| limestone | 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 |
| bisphenol A/ diglycidyl ether resin, liquid | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | EC50 | 48 | Crustacea | ca.2mg/L | 2 |
| bisphenol F diglycidyl ether copolymer | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | Not Available | Not Available | Not Available | Not Available | Not Available |
| glycidyl neodecanoate | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | LC50 | 96 | Fish | 4.102mg/L | 3 |
| | EC50 | 48 | Crustacea | ca.4.8mg/L | 2 |
| | EC50 | 96 | Algae or other aquatic plants | 0.348mg/L | 3 |
| | NOEC | 96 | Algae or other aquatic plants | =1mg/L | 1 |
| titanium dioxide | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | 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 |
| glycidyl neodecanoate | HIGH | HIGH |
| titanium dioxide | HIGH | HIGH |

Bioaccumulative potential

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

| | |
|-----------------------|-----------------------|
| glycidyl neodecanoate | LOW (LogKOW = 3.7305) |
| titanium dioxide | LOW (BCF = 10) |

Mobility in soil

| Ingredient | Mobility |
|---|-------------------|
| bisphenol A/ diglycidyl ether resin, liquid | LOW (KOC = 51.43) |
| glycidyl neodecanoate | LOW (KOC = 105.5) |
| titanium dioxide | LOW (KOC = 23.74) |

SECTION 13 DISPOSAL CONSIDERATIONS**Waste treatment methods**

| | |
|-------------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ 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. ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Authority for disposal. ▶ Bury or incinerate residue at an approved site. ▶ Recycle containers if possible, or dispose of in an authorised landfill. |
|-------------------------------------|--|



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**

| | |
|-------------------------|---|
| |  |
| Marine Pollutant |  |
| HAZCHEM | *3Z |

Land transport (UN)

| | |
|-------------------------------------|---|
| UN number | 3082 |
| UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains bisphenol A/ diglycidyl ether resin, liquid and bisphenol F diglycidyl ether copolymer) |
| Transport hazard class(es) | Class : 9 Subrisk : Not Applicable |
| Packing group | III |
| Environmental hazard | Environmentally hazardous |
| Special precautions for user | Special provisions : 274; 331; 335; 375 Limited quantity : 5 L |

Air transport (ICAO-IATA / DGR)

| | | |
|-------------------------------------|---|----------------|
| UN number | 3082 | |
| UN proper shipping name | Environmentally hazardous substance, liquid, n.o.s. * (contains bisphenol A/ diglycidyl ether resin, liquid and bisphenol F diglycidyl ether copolymer) | |
| Transport hazard class(es) | ICAO/IATA Class | 9 |
| | ICAO / IATA Subrisk | Not Applicable |
| | ERG Code | 9L |
| Packing group | III | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | A97 A158 A197 |
| | Cargo Only Packing Instructions | 964 |
| | Cargo Only Maximum Qty / Pack | 450 L |
| | Passenger and Cargo Packing Instructions | 964 |
| | Passenger and Cargo Maximum Qty / Pack | 450 L |
| | Passenger and Cargo Limited Quantity Packing Instructions | Y964 |
| | Passenger and Cargo Limited Maximum Qty / Pack | 30 kg G |

Sea transport (IMDG-Code / GGVSee)

| | | |
|-------------------------------------|---|----------------|
| UN number | 3082 | |
| UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains bisphenol A/ diglycidyl ether resin, liquid and bisphenol F diglycidyl ether copolymer) | |
| Transport hazard class(es) | IMDG Class | 9 |
| | IMDG Subrisk | Not Applicable |
| Packing group | III | |
| Environmental hazard | Marine Pollutant | |
| Special precautions for user | EMS Number | F-A , S-F |
| | Special provisions | 274 335 969 |
| | Limited Quantities | 5 L |

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 |
|------------|--|
| HSR002624 | N.O.S. (Subsidiary Hazard) Group Standard 2017 |
| HSR002535 | Gas Under Pressure Mixtures (Subsidiary Hazard) Group Standard 2017 |
| HSR002596 | Laboratory Chemicals and Reagent Kits Group Standard 2017 |
| HSR002530 | Cleaning Products (Subsidiary Hazard) Group Standard 2017 |
| HSR002585 | Fuel Additives (Subsidiary Hazard) Group Standard 2017 |
| HSR002519 | Aerosols (Subsidiary Hazard) Group Standard 2017 |
| HSR002521 | Animal Nutritional and Animal Care Products Group Standard 2017 |
| HSR002606 | Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard 2017 |
| HSR002644 | Polymers (Subsidiary Hazard) Group Standard 2017 |
| HSR002647 | Reagent Kits Group Standard 2017 |
| HSR002670 | Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2017 |
| HSR002638 | Photographic Chemicals (Subsidiary Hazard) Group Standard 2017 |
| HSR002565 | Embalming Products (Subsidiary Hazard) Group Standard 2017 |
| HSR002578 | Food Additives and Fragrance Materials (Subsidiary Hazard) Group Standard 2017 |
| HSR002558 | Dental Products (Subsidiary Hazard) Group Standard 2017 |
| HSR002684 | Water Treatment Chemicals (Subsidiary Hazard) Group Standard 2017 |
| HSR002573 | Fire Fighting Chemicals Group Standard 2017 |
| HSR100425 | Pharmaceutical Active Ingredients Group Standard 2017 |
| HSR002600 | Leather and Textile Products (Subsidiary Hazard) Group Standard 2017 |
| HSR002571 | Fertilisers (Subsidiary Hazard) Group Standard 2017 |

Continued...

| | |
|-----------|--|
| HSR002648 | Refining Catalysts Group Standard 2017 |
| HSR002653 | Solvents (Subsidiary Hazard) Group Standard 2017 |
| HSR002544 | Construction Products (Subsidiary Hazard) Group Standard 2017 |
| HSR002549 | Corrosion Inhibitors (Subsidiary Hazard) Group Standard 2017 |
| HSR100757 | Veterinary Medicine (Limited Pack Size, Finished Dose) Standard 2017 |
| HSR100758 | Veterinary Medicines (Non-dispersive Closed System Application) Group Standard 2017 |
| HSR100759 | Veterinary Medicines (Non-dispersive Open System Application) Group Standard 2017 |
| HSR002612 | Metal Industry Products (Subsidiary Hazard) Group Standard 2017 |
| HSR002503 | Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2017 |
| HSR002552 | Cosmetic Products Group Standard 2017 |

LIMESTONE IS FOUND ON THE FOLLOWING REGULATORY LISTS

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

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

Chemical Footprint Project - Chemicals of High Concern List

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

BISPHENOL F DIGLYCIDYL ETHER COPOLYMER IS FOUND ON THE FOLLOWING REGULATORY LISTS

Chemical Footprint Project - Chemicals of High Concern List

New Zealand Inventory of Chemicals (NZIoC)

GLYCIDYL NEODECANOATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

TITANIUM DIOXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B : Possibly carcinogenic to humans

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

New Zealand Approved Hazardous Substances with controls

New Zealand Inventory of Chemicals (NZIoC)

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 |
|--------------------|----------------|
| Not Applicable | Not Applicable |

Refer Group Standards for further information

Tracking Requirements

Not Applicable

National Inventory Status

| National Inventory | Status |
|-------------------------------|---|
| Australia - AICS | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (bisphenol A/ diglycidyl ether resin, liquid; bisphenol F diglycidyl ether copolymer; glycidyl neodecanoate) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | No (bisphenol F diglycidyl ether copolymer) |
| Japan - ENCS | Yes |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |

| | |
|----------------|---|
| Mexico - INSQ | No (bisphenol F diglycidyl ether copolymer) |
| Vietnam - NCI | Yes |
| Russia - ARIPS | Yes |
| Legend: | Yes = All CAS declared ingredients are on the inventory 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

| | |
|----------------------|------------|
| Revision Date | 01/11/2019 |
| Initial Date | 18/07/2017 |

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 |

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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