

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] HARD

## Chemwatch Material Safety Data Sheet

Issue Date: 16-Mar-2006

C317SC

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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#### PRODUCT NAME

EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] HARD

#### SYNONYMS

hardener, catalyst, "amine adduct", "curing agent"

#### PROPER SHIPPING NAME

CORROSIVE LIQUID, N.O.S.

(contains isophorone diamine and triethylenetetramine)

#### PRODUCT USE

Used according to manufacturer's directions. Requires that the two parts be mixed by hand or mixer before use, in accordance with manufacturers directions. Mix only as much as is required. Do not return the mixed material to the original containers. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation. Hardener component of a two-part epoxy concrete repair system.

#### SUPPLIER

Company: ITW Polymers & Fluids

Address:

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AUS

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### Section 2 - HAZARDS IDENTIFICATION

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#### STATEMENT OF HAZARDOUS NATURE

**HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the  
Criteria of NOHSC, and the ADG Code.**

#### POISONS SCHEDULE

S5

#### RISK

Harmful by inhalation, in contact with skin and if swallowed.

Causes burns.

Risk of serious damage to eyes.

May cause SENSITISATION by skin contact.

#### SAFETY

Keep container in a well ventilated place.

Avoid exposure - obtain special instructions before use.

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### Section 2 - HAZARDS IDENTIFICATION

Keep container tightly closed.  
Take off immediately all contaminated clothing.  
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
isophorone diamine	2855-13-2	<5
triethylenetetramine	112-24-3	<5
benzyl alcohol	100-51-6	<5
fillers		10-30
silica amorphous	7631-86-9	30-60
aromatic solvent		<10
other ingredients not contributing to the classification		balance

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

- 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.

#### EYE

If this product comes in contact with the eyes:

- 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

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

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Section 4 - FIRST AID MEASURES

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#### INHALED

- 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. Perform CPR if necessary.
- Transport to hospital, or doctor.

#### NOTES TO PHYSICIAN

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
  - Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
  - Oxygen is given as indicated.
  - The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
  - Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.
- Alkalis continue to cause damage after exposure.

#### INGESTION:

- Milk and water are the preferred diluents
- No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.
- \* Catharsis and emesis are absolutely contra-indicated.  
\* Activated charcoal does not absorb alkali.  
\* Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

#### SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology].
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### Section 5 - FIRE FIGHTING MEASURES

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#### EXTINGUISHING MEDIA

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

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### Section 5 - FIRE FIGHTING MEASURES

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- Water spray or fog - Large fires only.

#### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

#### FIRE/EXPLOSION HAZARD

- 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).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Combustion products include, carbon dioxide (CO<sub>2</sub>), hydrogen fluoride, nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material.

Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

May emit corrosive fumes.

#### FIRE INCOMPATIBILITY

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

#### HAZCHEM

2X

#### Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

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### Section 6 - ACCIDENTAL RELEASE MEASURES

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#### EMERGENCY PROCEDURES

##### MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

##### MAJOR SPILLS

- Clear area of personnel and move upwind.

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### Section 6 - ACCIDENTAL RELEASE MEASURES

- 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.
- Consider evacuation (or protect in place).
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

silica amorphous 500 mg/m<sup>3</sup>

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

silica amorphous 50 mg/m<sup>3</sup>

other than mild, transient adverse effects

without perceiving a clearly defined odour is:

silica amorphous 30 mg/m<sup>3</sup>

The threshold concentration below which most people.

will experience no appreciable risk of health effects:

silica amorphous 6 mg/m<sup>3</sup>

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

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

### Section 7 - HANDLING AND STORAGE

#### PROCEDURE FOR HANDLING

Contains low boiling substance:

Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.

- Check for bulging containers.
- Vent periodically

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### Section 7 - HANDLING AND STORAGE

- Always release caps or seals slowly to ensure slow dissipation of vapours.
  - Avoid all personal contact, including inhalation.
  - Wear protective clothing when risk of exposure occurs.
  - Use in a well-ventilated area.
  - Avoid contact with moisture.
  - Avoid contact with incompatible materials.
  - When handling, DO NOT eat, drink or smoke.
  - Keep containers securely sealed when not in use.
  - Avoid physical damage to containers.
  - Always wash hands with soap and water after handling.
  - Work clothes should be laundered separately. Launder contaminated clothing before re-use.
  - Use good occupational work practice.
  - Observe manufacturer's storing and handling recommendations.
  - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- DO NOT allow clothing wet with material to stay in contact with skin.

#### SUITABLE CONTAINER

- Lined metal can, Lined metal pail/ can
  - Plastic pail
  - Polyliner drum
  - Packing as recommended by manufacturer.
  - Check all containers are clearly labelled and free from leaks.
- For low viscosity materials
- Drums and jerricans must be of the non-removable head type.
  - Where a can is to be used as an inner package, the can must have a screwed enclosure.

For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids( between 15 C deg. and 40 deg C.):

- Removable head packaging;
  - Cans with friction closures and
  - low pressure tubes and cartridges
- may be used.

-

Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

#### STORAGE INCOMPATIBILITY

Avoid strong acids.  
Avoid reaction with oxidising agents.

#### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

DO NOT store near acids, or oxidising agents.

Protect containers against physical damage.

Check regularly for spills and leaks.

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## Section 7 - HANDLING AND STORAGE

No smoking, naked lights, heat or ignition sources.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3	Peak ppm	Peak mg/m3
Australia Exposure Standards	silica amorphous		2				

The following materials had no OELs on our record under the following CAS or Chemwatch (CW) numbers  
Epirez Multi-Purpose Epoxy Concrete Repair [MULTI II] Hard: No data available for CW:5137-56  
isophorone diamine: No data available for CAS:2855-13-2  
triethylenetetramine: No data available for CAS: 112-24-3  
benzyl alcohol: No data available for CAS: 100-51-6  
silica amorphous: No data available for CAS: 112945-52-5

### EMERGENCY EXPOSURE LIMITS

Material	Original IDLH Value (ppm)	Original IDLH Value (mg/m3)	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
silica amorphous	N.E.	N.E.	3,000	

### INGREDIENT DATA

#### ISOPHORONE DIAMINE:

No exposure limits set by NOHSC orACGIH.

#### TRIEETHYLENETETRAMINE:

No exposure limits set by NOHSC orACGIH.

CEL TWA: 1 ppm, 6 mg/m<sup>3</sup>; STEL: 2 ppm, 12 mg/m<sup>3</sup>

[compare OEL TWA (Sweden): 1 ppm, 6 mg/m<sup>3</sup>; STEL: 2 ppm, 12 mg/m<sup>3</sup> Sensitiser]

#### BENZYL ALCOHOL:

No exposure limits set by NOHSC orACGIH.

OEL STEL (Russia): 5 mg/m<sup>3</sup> Skin

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

Odour Threshold: 5.5 ppm

#### SILICA AMORPHOUS:

Not available

### PERSONAL PROTECTION

#### EYE

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes

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### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- When handling liquid-grade epoxy resins wear chemically protective gloves (e.g nitrile or nitrile-butadiene rubber), boots and aprons.
  - DO NOT use cotton or leather (which absorb and concentrate the resin), polyvinyl chloride, rubber or polyethylene gloves (which absorb the resin).
  - DO NOT use barrier creams containing emulsified fats and oils as these may absorb the resin; silicone-based barrier creams should be reviewed prior to use. Wear chemical protective gloves, eg. PVC. Wear safety footwear or safety gumboots, eg. Rubber. When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
- NOTE: 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.

#### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

#### ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas.

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### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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#### APPEARANCE

Grey combustible pqste with an amine-like odour; does not mix with water.

#### PHYSICAL PROPERTIES

Does not mix with water.

Sinks in water.

Corrosive.

Alkaline.

continued...

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### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight: Not Available  
Melting Range (°C): Not Available  
Solubility in water (g/L): Immiscible  
pH (1 % solution): Not Available  
Volatile Component (%vol): Not Available  
Relative Vapour Density (air=1): Not Available  
Lower Explosive Limit (%): Not Available  
Autoignition Temp (°C): Not Available  
State: LIQUID

Boiling Range (°C): Not Available  
Specific Gravity (water=1): 1.6-1.7  
pH (as supplied): Not Available  
Vapour Pressure (kPa): Not Available  
Evaporation Rate: Not Available  
Flash Point (°C): >100 (PMCC)  
Upper Explosive Limit (%): Not Available  
Decomposition Temp (°C): Not Available  
Viscosity: Not Available

### Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

#### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

### Section 11 - TOXICOLOGICAL INFORMATION

#### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Amines without benzene rings when swallowed are absorbed throughout the gut.

Corrosive action may cause damage throughout the gastrointestinal tract. They are removed through the liver, kidney and intestinal mucosa by enzyme breakdown.

Ingestion of amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhoea. The vomitus may contain blood and mucous.

If death does not occur within 24 hours there may be an improvement in the patients condition for 2-4 days only to be followed by the sudden onset of abdominal pain, boardlike abdominal rigidity or hypo-tension; this indicates that delayed gastric or oesophageal corrosive damage has occurred.

##### EYE

The material can produce chemical burns to the eye following direct contact.

Vapours or mists may be extremely irritating.

If applied to the eyes, this material causes severe eye damage.

Vapours of volatile amines irritate the eyes, causing excessive secretion of tears, inflammation of the conjunctiva and slight swelling of the cornea, resulting in "halos" around lights. This effect is temporary, lasting only for a few hours. However this condition can reduce the efficiency of undertaking skilled tasks, such as driving a car. Direct eye contact with liquid volatile amines may produce eye damage, permanent for the lighter species.

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## Section 11 - TOXICOLOGICAL INFORMATION

### SKIN

Skin contact with the material may be harmful; systemic effects may result following absorption.

The material can produce chemical burns following direct contact with the skin.

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.

Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitisation dermatitis in predisposed individuals. Cutaneous reactions include erythema, intolerable itching and severe facial swelling. Blistering, with weeping of serous fluid, and crusting and scaling may also occur. Individuals exhibiting "amine dermatitis" may experience a dramatic reaction upon re-exposure to minute quantities. Highly sensitive persons may even react to cured resins containing trace amounts of unreacted amine hardener. Minute quantities of air-borne amine may precipitate intense dermatological symptoms in sensitive individuals. Prolonged or repeated exposure may produce tissue necrosis.

Volatile amine vapours produce irritation and inflammation of the skin. Direct contact can cause burns. They may be absorbed through the skin and cause similar effects to swallowing, leading to death. The skin may exhibit whiteness, redness and wheals.

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.

### INHALED

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing.

Before starting consider control of exposure by mechanical ventilation.

Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma". The literature records several instances of systemic intoxications following the use of amines in epoxy resin systems.

Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.

### CHRONIC HEALTH EFFECTS

Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There is some evidence from animal testing that exposure to this material may result

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### Section 11 - TOXICOLOGICAL INFORMATION

in toxic effects to the unborn baby. Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity. Sensitised persons should not be allowed to work in situations where exposure may occur. Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma". The literature records several instances of systemic intoxications following the use of amines in epoxy resin systems. The material may accumulate in the human body and progressively cause tissue damage.

#### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

#### CARCINOGEN

IARC: International Agency for Research on Cancer (IARC)

Carcinogens: silica amorphous Category: Group 3: Not classifiable as to carcinogenicity to humans

### Section 12 - ECOLOGICAL INFORMATION

Marine Pollutant: Not Determined

Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

ISOPHORONE DIAMINE:

Prevent, by any means available, spillage from entering drains or water courses.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

DO NOT discharge into sewer or waterways.

LC50 (24h) Daphnae: 42 mg/L.

LD50 (48h) Leuciscus idus: 185 mg/L.

NOEC (21 day) Daphnia magna: 3 mg/L \*

EC10 (16hr) Pseudomonas putida: 1120 mg/L \*

Persistence/Biodegradability: 42% (DOC, OECD 303A) \*

8.0% (DOC, Die away test -9/69/EEC) \*

\* [Morton]

BENZYL ALCOHOL:

DO NOT discharge into sewer or waterways.

log Kow: 1.1

Koc: <5

Henry's atm m<sup>3</sup> /mol: 3.91 E-07

BOD 5 if unstated: 1.55-1.6, 33-62%

COD: 96%

ThOD: 2.519

BCF: 4

Toxicity Fish: LC50(96)10-460mg/L

Toxicity invertebrate: cell mult. inhib. 350mg/L

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### Section 12 - ECOLOGICAL INFORMATION

Bioaccumulation: not sig  
Anaerobic effects: sig degrad  
Effects on algae and plankton: inhib degrad. of glucose  
Degradation Biological: sig  
processes Abiotic: RxnOH\*,no photochem

#### SILICA AMORPHOUS:

Aquatic toxicity (Daphnia magna) 24h EC50: >1000 mg/l

Fish toxicity (Brachydanio rerio) 96h LC50: >10,000 mg/l

[Grace]

### Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralise at an approved treatment plant.
- Treatment should involve: Neutralisation with suitable dilute acid followed by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

If container can not be cleaned sufficiently well to ensure none of the original product remains 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.

### Section 14 - TRANSPORTATION INFORMATION

#### Labels Required

corrosive

#### HAZCHEM

2X

#### Land Transport UNDG:

Dangerous Goods Class:	8	Subrisk:	None
UN Number:	1760	Packing Group:	III
Shipping Name: CORROSIVE LIQUID, N.O.S. (contains isophorone diamine and triethylenetetramine)			

#### Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	1760	Packing Group:	III
ERG Code:	8L		
Shipping Name: Corrosive liquid, n.o.s. *			

#### Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1760	Packing Group:	III
EMS Number:	None	Marine Pollutant:	Not Determined
Shipping Name: CORROSIVE LIQUID, N.O.S.			

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] HARD

Chemwatch Material Safety Data Sheet

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## Section 15 - REGULATORY INFORMATION

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### POISONS SCHEDULE

S5

### REGULATIONS

isophorone diamine (CAS: 2855-13-2) is found on the following regulatory lists;

Australia Inventory of Chemical Substances (AICS)

Australia Poisons Schedule

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

triethylenetetramine (CAS: 112-24-3) is found on the following regulatory lists;

Australia Inventory of Chemical Substances (AICS)

Australia Poisons Schedule

OECD Representative List of High Production Volume (HPV) Chemicals

benzyl alcohol (CAS: 100-51-6) is found on the following regulatory lists;

Australia Inventory of Chemical Substances (AICS)

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

silica amorphous (CAS: 7631-86-9) is found on the following regulatory lists;

Australia High Volume Industrial Chemical List (HVICL)

Australia Inventory of Chemical Substances (AICS)

International Agency for Research on Cancer (IARC) Carcinogens

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

silica amorphous (CAS: 112945-52-5) is found on the following regulatory lists;

Australia High Volume Industrial Chemical List (HVICL)

Australia Inventory of Chemical Substances (AICS)

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

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## Section 16 - OTHER INFORMATION

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### Ingredients with multiple CAS Numbers

Ingredient Name	CAS
silica amorphous	7631-86-9, 112945-52-5

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continued...

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**Section 16 - OTHER INFORMATION**

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# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

## Chemwatch Material Safety Data Sheet

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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#### PRODUCT NAME

EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

#### SYNONYMS

#### PRODUCT USE

Used according to manufacturer's directions. Requires that the two parts be mixed by hand or mixer before use, in accordance with manufacturers directions. Mix only as much as is required. Do not return the mixed material to the original containers. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Base component of a two-part epoxy concrete repair system. Base component of a two-part epoxy concrete repair system.

#### SUPPLIER

Company: ITW Polymers & Fluids  
Address:  
100 Hassall Street  
Wetherill Park  
NSW, 2164  
AUS  
Telephone: +61 2 9757 8800  
Emergency Tel: +61 2 9757 8800  
Fax: 1800 803 596

#### QUEENSLAND DISTRIBUTOR

*INTERNATIONAL TRADERS* Pty Ltd  
6/286 Evans Rd  
Salisbury - BRISBANE - QLD 4107  
Phone (07) 3272 9051 Fax (07) 3272 9744

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### Section 2 - HAZARDS IDENTIFICATION

---

#### STATEMENT OF HAZARDOUS NATURE

**HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.**

#### POISONS SCHEDULE

S5

#### RISK

Harmful by inhalation.  
Irritating to eyes and skin.  
May cause SENSITISATION by skin contact.  
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### SAFETY

Keep container in a well ventilated place.  
Avoid exposure - obtain special instructions before use.  
Take off immediately all contaminated clothing.  
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
bisphenol A/ epichlorohydrin resin	25068-38-6	10-30
(C12-14)alkylglycidyl ether	68609-97-2	<10
other ingredients not contributing to the classification		balance

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

- 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.

#### EYE

If this product comes in contact with the eyes:

- Wash out immediately with fresh 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.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

#### SKIN

If skin contact occurs:

- 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.

#### INHALED

- 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. Perform CPR if necessary.
- Transport to hospital, or doctor.

#### NOTES TO PHYSICIAN

Treat symptomatically.

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

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

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- 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).
  - May emit acrid smoke.
  - Mists containing combustible materials may be explosive.
- Combustion products include, carbon dioxide (CO<sub>2</sub>), aldehydes, other pyrolysis products typical of burning organic material.  
May emit poisonous fumes.  
May emit corrosive fumes.

### FIRE INCOMPATIBILITY

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

### HAZCHEM

None

### Personal Protective Equipment

Breathing apparatus.  
Gas tight chemical resistant suit.  
Limit exposure duration to 1 BA set 30 mins.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours/ aerosols/ or dusts and avoid contact with skin and

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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### Section 6 - ACCIDENTAL RELEASE MEASURES

eyes.

- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Place in a suitable labelled container for waste disposal.

#### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

#### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

bisphenol A/ epichlorohydrin resin                      500 mg/m<sup>3</sup>

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

bisphenol A/ epichlorohydrin resin                      50 mg/m<sup>3</sup>

other than mild, transient adverse effects without perceiving a clearly defined odour is:

bisphenol A/ epichlorohydrin resin                      30 mg/m<sup>3</sup>

The threshold concentration below which most people will experience no appreciable risk of health effects:

bisphenol A/ epichlorohydrin resin                      10 mg/m<sup>3</sup>

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
-----------------	---------	-----------	---------

R50	>= 0.25%	Corrosive (C)	>= 5.0%
-----	----------	---------------	---------

R51	>= 2.5%		
-----	---------	--	--

else	>= 10%		
------	--------	--	--

where percentage is percentage of ingredient found in the mixture

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

continued...

## EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- 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.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer
- Check all containers are clearly labelled and free from leaks.

### STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

---

### EXPOSURE CONTROLS

The following materials had no OELs on our record under the following CAS or Chemwatch (CW) numbers  
Epirez Multi-Purpose Epoxy Concrete Repair [MULTI II] Cpd: No data available for CW:5137-55  
bisphenol A/ epichlorohydrin resin: No data available for CAS:25068-38-6  
(C12-14)alkylglycidyl ether: No data available for CAS:68609-97-2

Not available. Refer to individual constituents.

### INGREDIENT DATA

BISPHENOLA/ EPICHLOROHYDRIN RESIN:

(C12-14)ALKYLGLYCIDYL ETHER:

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

No exposure limits set by NOHSC orACGIH.

### PERSONAL PROTECTION

#### EYE

- 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 lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- When handling liquid-grade epoxy resins wear chemically protective gloves (e.g nitrile or nitrile-butadiene rubber), boots and aprons.
  - DO NOT use cotton or leather (which absorb and concentrate the resin), polyvinyl chloride, rubber or polyethylene gloves (which absorb the resin).
  - DO NOT use barrier creams containing emulsified fats and oils as these may absorb the resin; silicone-based barrier creams should be reviewed prior to use. Wear chemical protective gloves, eg. PVC. Wear safety footwear or safety gumboots, eg. Rubber.
- NOTE: 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.

#### OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

### ENGINEERING CONTROLS

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:  
solvent, vapours, degreasing etc.,  
evaporating from tank (in still air).  
aerosols, fumes from pouring

Air Speed:  
0.25-0.5 m/s (50-100 f/min.)  
0.5-1 m/s (100-200 f/min.)

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge ( active generation into zone of rapid air motion) 1-2.5 m/s (200-500 f/min.)

grinding, abrasive blasting, tumbling, high speed wheel generated dusts( released at high initial velocity into zone of very high rapid air motion). 2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

#### APPEARANCE

Thick white paste with a characteristic odour; does not mix with water.

#### PHYSICAL PROPERTIES

Does not mix with water.

Sinks in water.

Molecular Weight: Not Available  
Melting Range (°C): Not Available  
Solubility in water (g/L): Immiscible

Boiling Range (°C): Not Available  
Specific Gravity (water=1): 1.4  
pH (as supplied): Not Available

continued...

# EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

pH (1 % solution): Not Available  
Volatile Component (%vol): Not Available  
Relative Vapour Density (air=1): Not Available  
Lower Explosive Limit (%): Not Available  
Autoignition Temp (°C): Not Available  
State: Free-flowing Paste

Vapour Pressure (kPa): Not Available  
Evaporation Rate: Not Available  
Flash Point (°C): >100 (PMCC)  
Upper Explosive Limit (%): Not Available  
Decomposition Temp (°C): Not Available  
Viscosity: Not Available

### Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

#### CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

### Section 11 - TOXICOLOGICAL INFORMATION

#### POTENTIAL HEALTH EFFECTS

##### ACUTE HEALTH EFFECTS

###### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

###### EYE

This material can cause eye irritation and damage in some persons. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

###### SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. The material may accentuate any pre-existing dermatitis condition. 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. 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. 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.

###### INHALED

The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of the material, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

###### CHRONIC HEALTH EFFECTS

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence

continued...

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### Section 11 - TOXICOLOGICAL INFORMATION

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that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. 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.

#### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

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### Section 12 - ECOLOGICAL INFORMATION

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DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

BISPHENOLA/ EPICHLOROHYDRIN RESIN:

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

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### Section 13 - DISPOSAL CONSIDERATIONS

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If container can not be cleaned sufficiently well to ensure none of the original product remains 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.

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### Section 14 - TRANSPORTATION INFORMATION

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#### HAZCHEM

None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN,IATA,IMDG

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### Section 15 - REGULATORY INFORMATION

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#### POISONS SCHEDULE

S5

#### REGULATIONS

bisphenol A/ epichlorohydrin resin (CAS: 25068-38-6) is found on the following regulatory lists;

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Australia Poisons Schedule

OECD Representative List of High Production Volume (HPV) Chemicals

(C12-14)alkylglycidyl ether (CAS: 68609-97-2) is found on the following

continued...

## EPIREZ MULTI-PURPOSE EPOXY CONCRETE REPAIR [MULTI II] CPD

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### Section 15 - REGULATORY INFORMATION

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regulatory lists;  
Australia Inventory of Chemical Substances (AICS)  
Australia Poisons Schedule  
OECD Representative List of High Production Volume (HPV) Chemicals

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### Section 16 - OTHER INFORMATION

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