

SAFETY DATA SHEET

EPIREZ EPOXY ELECTRICAL MAINTENANCE KIT [324A] HARDENER

Infosafe No.: HXFOI
ISSUED Date : 18/10/2016
ISSUED by: ITW POLYMERS AND FLUIDS

1. IDENTIFICATION

GHS Product Identifier

EPIREZ EPOXY ELECTRICAL MAINTENANCE KIT [324A] HARDENER

Company Name

ITW POLYMERS AND FLUIDS (ABN 63 004 235 063)

Address

100 Hassall Street Wetherill Park
NSW 2164 Australia

Telephone/Fax Number

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Emergency phone number

1800 385 556 / 0438 465 960

Emergency Contact Name

(02) 9652-1713 A/HRS

Recommended use of the chemical and restrictions on use

Relevant identified uses:

Hardener or Part B of a 2 pack
epoxy adhesive

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

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Eye Damage/Irritation: Category 1

Hazardous to the Aquatic Environment - Acute Hazard: Category 2

Hazardous to the Aquatic Environment - Long-Term Hazard: Category 2

Sensitization - Skin: Category 1

Skin Corrosion/Irritation: Category 1A

Corrosive to Metals: Category 1

Acute Toxicity - Oral: Category 3

Acute Toxicity - Dermal: Category 3

Acute Toxicity - Inhalation: Category 2

Signal Word (s)

DANGER

Hazard Statement (s)

H290 May be corrosive to metals.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H331 Toxic if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Pictogram (s)

Corrosion, Skull and crossbones, Environment



Precautionary statement – Prevention

P234 Keep only in original container.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 Wear respiratory protection.

Precautionary statement – Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P391 Collect spillage.

Precautionary statement – Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Precautionary statement – Disposal

P501 Dispose of contents/container in accordance with local regulations.

Other Information

Legend:

1. Classified by; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
4,4'-methylenebis(2-methylcyclohexanamine)	6864-37-5	30-60 %w
Resin diluant	Not Available	10-30 %w
Cresylic Acid	1319-77-3	10-30 %w
Isophorone diamine	2855-13-2	<5 %w

Other Information

Substances:

See section below for composition of Mixtures

4. FIRST-AID MEASURES

Inhalation

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, without delay.

Ingestion

For advice, contact a Poisons Information Centre or a doctor at once.

Urgent hospital treatment is likely to be needed.

If swallowed do NOT induce vomiting.

If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

Observe the patient carefully.

Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.

Transport to hospital or doctor without delay.

Skin

If spilt on skin:

Remove contaminated clothing, swab repeatedly with glycerin, PEG (polyethylene glycol), or PEG/ methylated spirit mixture or if necessary with methylated spirit alone*

Contamination of skin with phenol and some of its derivatives may produce rapid collapse and death.

After skin contamination, keep patient under observation for at least 24-48 hours.

Phenol-decontaminating fluid is more effective than water in removing phenol from the skin and retarding absorption; olive oil or vegetable oil may also be used; do not use mineral oil.

Alcohols* (methylated spirit, for example) may enhance absorption and their use alone may be ill-advised; some authorities however continue to advise the use of such treatment.

Rapid water dilution of phenol burns may increase systemic absorption by decreasing the extent of the coagulum and thus allowing greater absorption (1).

(1) Ellenhorn and Barceloux: Medical Toxicology: Diagnosis and Treatment of Human Poisoning.

Eye contact

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.

Indication of immediate medical attention and special treatment needed if necessary

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]

For acute or short term repeated exposures to phenols/ cresols:

Phenol is absorbed rapidly through lungs and skin. [Massive skin contact may result in collapse and death]*

[Ingestion may result in ulceration of upper respiratory tract; perforation of oesophagus and/or stomach, with attendant complications, may occur.

Oesophageal stricture may occur.]*

An initial excitatory phase may present. Convulsions may appear as long as 18 hours after ingestion. Hypotension and ventricular tachycardia that require vasopressor and antiarrhythmic therapy, respectively, can occur.

Respiratory arrest, ventricular dysrhythmias, seizures and metabolic acidosis may complicate severe phenol exposures so the initial attention should be directed towards stabilisation of breathing and circulation with ventilation, intubation, intravenous lines, fluids and cardiac monitoring as indicated.

[Vegetable oils retard absorption; do NOT use paraffin oils or alcohols. Gastric lavage, with endotracheal intubation, should be repeated until phenol odour is no longer detectable; follow with vegetable oil. A saline cathartic should then be given.]*

ALTERNATIVELY: Activated charcoal (1g/kg) may be given. A cathartic should be given after oral activated charcoal.

Severe poisoning may require slow intravenous injection of methylene blue to treat methaemoglobinaemia.

[Renal failure may require haemodialysis.]*

Most absorbed phenol is biotransformed by the liver to ethereal and glucuronide sulfates and is eliminated almost completely after 24 hours. [Ellenhorn and Barceloux: Medical Toxicology] *[Union Carbide]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed to the Exposure Standard (ES or TLV):

Determinant: 1. Total phenol in blood

Index: 250 mg/gm creatinine

Sampling Time: End of shift

Comments: B, NS

B: Background levels occur in specimens collected from subjects NOT exposed

NS: Non-specific determinant; also seen in exposure to other materials

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam.

Dry chemical powder.

BCF (where regulations permit).

Carbon dioxide.

Water spray or fog - Large fires only.

Specific Methods

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.

Specific Hazards Arising From The Chemical

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

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 (CO₂), nitrogen oxides (NO_x), other pyrolysis products typical of burning organic material May emit corrosive fumes.

Hazchem Code

2X

Decomposition Temperature

Not Available

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

See section 8

Clean-up Methods - Small Spillages

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.

Wipe up.

Place in a suitable, labelled container for waste disposal.

Clean-up Methods - Large Spillages

Clear area of personnel and move upwind.

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.

Environmental Precautions

See section 12

Other Information

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

7. HANDLING AND STORAGE

Precautions for Safe Handling

Safe handling:

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.

DO NOT allow clothing wet with material to stay in contact with skin

Other information:

Store in original containers.

Keep containers securely sealed.

No smoking, naked lights or ignition sources.

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 storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

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.

Storage incompatibility:

Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.

Avoid strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

INGREDIENT DATA

Source: Australia Exposure Standards

Ingredient: cresylic acid

Material name: Cresol, all isomers

TWA: 22 mg/m³ / 5 ppm

STEL: Not Available

Peak: Not Available

Notes: Sk

EMERGENCY LIMITS

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Material name: Laromin C 260; (bis(4-Amino-3-methylcyclohexyl) methane; Dimethyldicyane)

TEEL-1: 0.28 mg/m³

TEEL-2: 3.1 mg/m³

TEEL-3: 19 mg/m³

Ingredient: cresylic acid

Material name: Cresols

TEEL-1: 4.52 ppm

TEEL-2: 25 ppm

TEEL-3: 250 ppm

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Original IDLH: Not Available

Revised IDLH: Not Available

Ingredient: resin diluant

Original IDLH: Not Available

Revised IDLH: Not Available

Ingredient: cresylic acid

Original IDLH: 250 ppm

Revised IDLH: 250 [Unch] ppm

Ingredient: isophorone diamine

Original IDLH: Not Available

Revised IDLH: Not Available

Appropriate Engineering Controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Refer also to protective measures for the other component used with the product. Read both SDS before using; store and attach SDS together.

Respiratory Protection

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

Eye Protection

Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.

Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.

Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.

Alternatively a gas mask may replace splash goggles and face shields.

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

Hand Protection

Elbow length PVC gloves

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.

Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

Thermal Hazards

Not Available

Body Protection

Other protection:

Overalls.

PVC Apron.

PVC protective suit may be required if exposure severe.

Eyewash unit.

Ensure there is ready access to a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Liquid

Appearance

Clear liquid with strong ammoniacal odour. Immiscible with water.

Odour

Not Available

Decomposition Temperature

Not Available

Solubility in Water

Immiscible

pH

Not Applicable (as supplied)

Not Available as a solution (1%)

Vapour Pressure

Not Available

Vapour Density (Air=1)

Not Available

Evaporation Rate

Not Available

Odour Threshold

Not Available

Viscosity

Not Available

Volatile Component

Not Available

Partition Coefficient: n-octanol/water

Not Available

Surface tension

Not Available

Flash Point

>100 °C (PMCC)

Flammability

Not Applicable

Auto-Ignition Temperature

Not Available

Explosion Limit - Upper

Not Available

Explosion Limit - Lower

Not Available

Explosion Properties

Not Available

Molecular Weight

Not Applicable

Oxidising Properties

Not Available

Initial boiling point and boiling range

Not Available

Relative density

1.1 (Water = 1)

Melting/Freezing Point

Not Available

Other Information

Taste: Not Available

Gas group: Not Available

VOC g/L: Not Available

10. STABILITY AND REACTIVITY

Reactivity

See section 7

Chemical Stability

Unstable in the presence of incompatible materials.

Product is considered stable.

Hazardous polymerisation will not occur.

Conditions to Avoid

See section 7

Incompatible materials

See section 7

Hazardous Decomposition Products

See section 5

Possibility of hazardous reactions

See section 7

11. TOXICOLOGICAL INFORMATION

Toxicology Information

Epirez Epoxy Electrical Maintenance Kit [324A] Hardener

TOXICITY: Not Available

IRRITATION: Not Available

4,4'-methylenebis(2-methylcyclohexanamine)

TOXICITY:

Dermal (rabbit) LD50: 200 mg/kg[2]

Inhalation (rat) LC50: 0.42 mg/l/4h*[2]

Oral (rat) LD50: 320 mg/kg[2]

IRRITATION: Nil reported

Cresylic acid

TOXICITY:

Dermal (rabbit) LD50: 200 mg/kg[2]

Oral (rat) LD50: 1454 mg/kg[2]

IRRITATION:

Eye (rabbit): 105 mg - SEVERE

Skin (rabbit): 524 mg/24h - SEVERE

Isophorone diamine

TOXICITY: Oral (rat) LD50: 1030 mg/kg[2]

IRRITATION: [Manufacturer HUE]

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

4,4'-METHYLENEBIS(2-METHYLCYCLOHEXANAMINE)

For 4,4'-methylenebis(2-methylcyclohexanamine) (DMD):

Acute toxicity: In humans (epoxy resins production workers) scleroderma-like skin changes have been described revealing 4,4'-methylenebis(2-methylcyclohexanamine) as most probable causative agent. In DMD production workers unspecific skin changes, but no scleroderma-like symptoms were seen. DMD is harmful via the oral route and toxic via the dermal and inhalation route:

LD50 rat (oral): > 320 < 460 mg/kg bw, symptoms: unspecific;

LC50 rat (inhalation, liquid aerosol): 420 mg/m³/4h, symptoms: irritation of the airways;

LD50 rabbit (dermal): > 200 < 400 mg/kg bw, symptoms: cyanosis, necrotic changes at the test site.

The substance is highly corrosive to skin (full thickness necrosis after 3 minutes of exposure) and may cause severe damage to eyes.

In the guinea pig maximization test the substance showed no sensitising effect.

In a well conducted rat 90-day inhalation study (OECD TG 413) body weight development was impaired, local irritative effects observed for the skin and upper airways (nasal mucosa) and target organ toxicity indicative of a mild anaemic effect as well as effects on the liver, testes and kidneys were seen at 48 mg/m³. No histopathological correlate was found with respect to increased absolute lung weights.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

* [BASF]

ISOPHORONE DIAMINE

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. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

Isophorone diamine is a strong skin irritant, corrosive with repeated application. Frequent occupational exposure may lead to the development of allergic skin inflammation. There could be damage to the smell organ, throat and lungs following inhalational exposure. Reduced kidney weight can result. No effects on reproduction gene alteration and cancer formation have been observed. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

4,4'-METHYLENEBIS(2-METHYLCYCLOHEXANAMINE) & CRESYLIC ACID & ISOPHORONE DIAMINE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

4,4'-METHYLENEBIS(2-METHYLCYCLOHEXANAMINE) & ISOPHORONE DIAMINE

The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

4,4'-METHYLENEBIS(2-METHYLCYCLOHEXANAMINE) & ISOPHORONE DIAMINE

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.

Acute Toxicity: Data required to make classification available

Ingestion

Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.

Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow.

Amines without benzene rings when swallowed are absorbed throughout the gut. Corrosive action may cause damage throughout the gastrointestinal tract.

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

Inhalation

Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane.

Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.

Inhalation of amine vapours may cause irritation of the mucous membrane of the nose and throat, and lung irritation with respiratory distress and cough. Swelling and inflammation of the respiratory tract is seen in serious cases; with headache, nausea, faintness and anxiety.

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

Skin

Skin contact with the material may produce toxic effects; systemic effects may result following absorption.

The material can produce severe 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.

Eye

Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

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.

Skin corrosion/irritation

Data required to make classification available

Serious eye damage/irritation

Data required to make classification available

Mutagenicity

Data Not Available to make classification

Respiratory sensitisation

Data required to make classification available

Skin Sensitisation

Data required to make classification available

Carcinogenicity

Data Not Available to make classification

Reproductive Toxicity

Data Not Available to make classification

STOT-single exposure

Data Not Available to make classification

STOT-repeated exposure

Data Not Available to make classification

Aspiration Hazard

Data Not Available to make classification

Chronic 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.

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

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. 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". Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Endpoint: LC50

Test Duration (hr): 96

Species: Fish

Value: 2.974mg/L

Source: 3

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Endpoint: EC50

Test Duration (hr): 48

Species: Crustacea

Value: 4.57mg/L

Source: 2

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Endpoint: EC50

Test Duration (hr): 96

Species: Algae or other aquatic plants

Value: 1.122mg/L

Source: 3

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Endpoint: EC10

Test Duration (hr): 96

Species: Algae or other aquatic plants

Value: =0.41mg/L

Source: 1

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Endpoint: NOEC

Test Duration (hr): 72

Species: Algae or other aquatic plants

Value: 0.13mg/L

Source: 2

Ingredient: cresylic acid

Endpoint: LC50

Test Duration (hr): 96

Species: Fish

Value: 0.0012804mg/L

Source: 4

Ingredient: cresylic acid

Endpoint: EC50

Test Duration (hr): 48

Species: Crustacea

Value: 7mg/L

Source: 4

Ingredient: cresylic acid

Endpoint: EC50

Test Duration (hr): 96

Species: Crustacea

Value: 5mg/L

Source: 2

Ingredient: cresylic acid
Endpoint: NOEC
Test Duration (hr): 96
Species: Fish
Value: 0.3mg/L
Source: 2

Ingredient: isophorone diamine
Endpoint: LC50
Test Duration (hr): 96
Species: Fish
Value: 54.352mg/L
Source: 3

Ingredient: isophorone diamine
Endpoint: EC50
Test Duration (hr): 48
Species: Crustacea
Value: 17.4mg/L
Source: 4

Ingredient: isophorone diamine
Endpoint: EC50
Test Duration (hr): 96
Species: Algae or other aquatic plants
Value: 7.221mg/L
Source: 3

Ingredient: isophorone diamine
Endpoint: EC10
Test Duration (hr): 72
Species: Algae or other aquatic plants
Value: =3.1mg/L
Source: 1

Ingredient: isophorone diamine
Endpoint: NOEC
Test Duration (hr): 72
Species: Algae or other aquatic plants
Value: 1.5mg/L
Source: 2

Legend:

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

Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)
Persistence: Water/Soil: HIGH
Persistence: Air: HIGH

Ingredient: cresylic acid
Persistence: Water/Soil: LOW (Half-life = 49 days)
Persistence: Air: LOW (Half-life = 0.67 days)

Ingredient: isophorone diamine
Persistence: Water/Soil: HIGH

Persistence: Air: HIGH

Mobility

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Mobility: LOW (KOC = 1838)

Ingredient: isophorone diamine

Mobility: LOW (KOC = 340.4)

Bioaccumulative Potential

Ingredient: 4,4'-methylenebis(2-methylcyclohexanamine)

Bioaccumulation: LOW (BCF = 60)

Ingredient: isophorone diamine

Bioaccumulation: LOW (BCF = 3.4)

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Product / Packaging disposal:

Recycle wherever possible or consult manufacturer for recycling options.

Consult State Land Waste Management Authority for disposal.

Material may be disposed of by controlled burning in an approved incinerator or buried in an approved landfill.

Prior to disposal in a landfill the material should be mixed with the other component and reacted to render the material inert.

Extreme caution should be taken when heating the resin/curing agent mix.

Recycle containers where possible, or dispose of in an authorised landfill.

14. TRANSPORT INFORMATION

U.N. Number

1760

UN proper shipping name

CORROSIVE LIQUID, N.O.S.

Transport hazard class(es)

8

Packing Group

III

Hazchem Code

2X

IERG Number

37

Other Information

Labels Required:

Marine Pollutant: Environment

HAZCHEM: 2X

Land transport (ADG)

UN number: 1760

UN proper shipping name: CORROSIVE LIQUID, N.O.S. (contains 4,4'-methylenebis(2-methylcyclohexanamine))

Transport hazard class(es):

Class: 8

Subrisk: Not Applicable

Packing group: III

Environmental hazard: Not Applicable

Special precautions for user:

Special provisions: 223 274

Limited quantity: 5 L

Air transport (ICAO-IATA / DGR)
UN number: 1760
UN proper shipping name: Corrosive liquid, n.o.s. * (contains 4,4'-methylenebis(2-methylcyclohexanamine))
Transport hazard class(es):
ICAO/IATA Class: 8
ICAO / IATA Subrisk: Not Applicable
ERG Code: 8L
Packing group: III
Environmental hazard: Not Applicable
Special precautions for user:
Special provisions: A3A803
Cargo Only Packing Instructions: 856
Cargo Only Maximum Qty / Pack: 60 L
Passenger and Cargo Packing Instructions: 852
Passenger and Cargo Maximum Qty / Pack: 5 L
Passenger and Cargo Limited Quantity Packing Instructions: Y841
Passenger and Cargo Limited Maximum Qty / Pack: 1 L

Sea transport (IMDG-Code / GGVSee)
UN number: 1760
UN proper shipping name: CORROSIVE LIQUID, N.O.S. (contains 4,4'-methylenebis(2-methylcyclohexanamine))
Transport hazard class(es):
IMDG Class: 8
IMDG Subrisk: Not Applicable
Packing group: III
Environmental hazard: Marine Pollutant
Special precautions for user:
EMS Number: F-A, S-B
Special provisions: 223 274
Limited Quantities: 5 L

Transport in bulk according to Annex II of MARPOL and the IBC code:
Not Applicable

15. REGULATORY INFORMATION

Regulatory information

4,4'-METHYLENEBIS(2-METHYLCYCLOHEXANAMINE)(6864-37-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

CRESYLIC ACID(1319-77-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards
Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

ISOPHORONE DIAMINE(2855-13-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

National Inventory: Australia - AICS

Status: Y

National Inventory: Canada - DSL

Status: Y

National Inventory: Canada - NDSL

Status: N (cresylic acid; isophorone diamine; 4,4'-methylenebis(2-methylcyclohexanamine))

National Inventory: China - IECSC
Status: Y

National Inventory: Europe - EINEC / ELINCS / NLP
Status: Y

National Inventory: Japan - ENCS
Status: Y

National Inventory: Korea - KECI
Status: Y

National Inventory: New Zealand - NZIoC
Status: Y

National Inventory: Philippines - PICCS
Status: Y

National Inventory: USA - TSCA
Status: Y

Legend:

Y = All ingredients are on the inventory

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

Poisons Schedule

S6

16. OTHER INFORMATION

Other Information

Version No: 6.1.1.1

Safety Data Sheet according to WHS and ADG requirements

S.GHS.AUS.EN

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.

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END OF SDS

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