

1. IDENTIFICATION OF PREPARATION & OF COMPANY

Product: Epoxy Hardener
Manufacturer: Chemco International Ltd
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2. COMPOSITION INFORMATION ON INGREDIENTS

Epoxy cross-linking agent.

| Chemicals | Classification | Risk phrases |
|----------------------|----------------|--------------------|
| Benzyl alcohol | Xn | R20/22 |
| Cycloaliphatic amine | C | R22, R34, R37, R43 |

The remaining 30% of the composition is a blend of proprietary, non-hazardous chemicals that are trade secret.

3. HAZARDS IDENTIFICATION

Acute effects: Harmful by inhalation and if swallowed. Causes burns. Product vapour in low concentrations can cause lacrimation, conjunctivitis and corneal edema when absorbed into the tissue of the eye from the atmosphere. May cause skin sensitisation by skin contact. If absorbed through skin, may cause nausea, headache and general discomfort.

Long-term effects: Prolonged or repeated exposure may cause allergic reaction/sensitisation and may result in adverse respiratory/eye/skin effects.

4. FIRST AID MEASURES

Inhalation: Move to fresh air if effects occur. Seek medical attention.
Ingestion: Immediately give plenty of water (if possible charcoal slurry). Seek medical attention immediately. Do not induce vomiting. Fully trained personnel can use oxygen or artificial respiration if required.

Eyes: Rinse with flowing water immediately for at least 15 minutes. Seek medical attention.

Skin: Remove contaminated clothing. Flush with flowing water for at least 15 minutes. Wash affected area with soap and water. Seek medical attention if irritation persists.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Water spray, alcohol foam, dry chemical powders, carbon dioxide, dry sand or limestone.

Special exposure hazards: May generate toxic, irritating or flammable combustion products. Contact of liquid with skin must be prevented. Sudden reaction and fire may result if product is mixed with an oxidising agent.

5. FIRE-FIGHTING MEASURES (cont'd)

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|-----------------------------------|---|
| Special exposure hazards: | May generate carbon monoxide gas. May generate toxic nitrogen oxide gases. May generate ammonia gas. Personnel in vicinity and downwind should be evacuated. |
| Special fire-fighting procedures: | Retain expended liquids from fire-fighting for later disposal. Fire fighters should wear butyl rubber boots, gloves, body suit, self-contained breathing apparatus and a face shield. Water spray is also useful in cooling fire-exposed tanks and in dispersing vapours. |

6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions: | Avoid contamination of ground and surface water. Open enclosed spaces to outside atmosphere. Wear protective clothing, boots, gloves and eye protection. Notify local health authorities and other appropriate emergencies if such contamination should occur. Potential for carbon monoxide and/or nitrous oxides generation in a fire must be recognised. |
| Methods for cleaning up: | If recovery is not feasible, add mix with dry soil, sand or non-reactive absorbent and place in a container or dumpster pending disposal. Flush area with water spray. Clean-up personnel must be equipped with self-contained breathing apparatus and butyl rubber protective clothing. |

7. HANDLING & STORAGE

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| Handling: | Avoid breathing of vapours. Avoid contact with skin or eyes. Handle in well ventilated work space. When handling do not eat, drink or smoke. |
| Storage: | Keep in a cool, dry, ventilated storage and in closed steel containers (preferably outdoors above ground). Keep away from acids and oxidisers, heat or flames. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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|-------------------------|--|
| Engineering controls: | Provide general and/or local exhaust ventilation to control airborne concentrations below the recommended exposure guideline. |
| Exposure controls: | Not established. |
| Respiratory protection: | In poorly ventilated areas a cartridge mask approved for organic vapours is recommended. |
| Eye protection: | Chemical safety glasses, splash-proof eye goggles with a full-face shield. Contact lenses should not be worn. |
| Skin protection: | Impervious clothing. Slicker suit. Rubber boots. Full rubber suit (rain gear). Butyl or latex protective clothing. |
| Hand protection: | Neoprene rubber gloves. Impermeable gloves. Cuffed butyl rubber gloves. Nitrile rubber gloves. The break-through time of the selected gloves must be greater than the intended use period. |

9. PHYSICAL & CHEMICAL PROPERTIES

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|------------------------------------|-------------------------|
| Physical state: | Liquid. |
| Colour: | Colourless. |
| Odour: | Ammoniacial. |
| pH: | Alkaline. |
| Boiling point: | 207°C |
| Melting point: | < -18°C |
| Flash point: | 112°C (tag closed cup). |
| Water solubility: | < 1.00% |
| Solubility in hydrocarbon solvent: | > 90% (25°C n-octanol). |
| Viscosity (CFS) @ 25°C: | 600 |
| Relative density @ 25°C: | 1.03 |
| Vapour pressure: | No data. |

10. STABILITY & REACTIVITY

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| Materials to avoid: | Mineral acids (i.e. sulphuric, phosphoric, etc). Organic acids (i.e. acetic, citric acid, etc). Oxidising agents i.e. perchlorates, nitrates, etc). Reactive metals (i.e. sodium, calcium, zinc, etc). Sodium or calcium hypochlorite. Product slowly corrodes copper, aluminium, zinc and galvanised surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Materials reactive with hydroxyl compounds. A reaction accompanied by large heat release occurs when the product is mixed with acids. Heat generated may be sufficient to cause vigorous boiling creating a hazard due to splashing or splattering of hot metal. |
| Hazardous decomposition products: | In a fire, material produces carbon monoxide/oxide. Nitrogen oxides (highly toxic) and consequently nitric acid. Nitrogen oxide can react water vapours to form corrosive nitric acid. When heated, produce ammonia and irritating and toxic fumes. |

11. TOXICOLOGICAL INFORMATION

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|--------------------------|--------------|-----------|--------------|
| Acute toxicity: | | | |
| Oral LD50: | > 2,000mg/kg | (rat). | (no deaths). |
| Dermal LD50: | > 2,110mg/kg | (rabbit). | (estimate). |
| Inhalation: | No data. | | |
| Irritation effects data: | Corrosive. | (rabbit). | |

12. ECOLOGICAL INFORMATION

No data.

13. DISPOSAL CONSIDERATIONS

Product: Dispose of in accordance with local and national regulations. Wear protective clothing during disposal operations. If disposal is by a waste contractor, make sure that they have sufficient information and that waste containers are properly labelled.

14. TRANSPORT INFORMATION

Proper shipping name: Amines, liquid, corrosive, n.o.s.
(Cycloaliphatic amine)

Road/Rail
ADR/RID Class: 8 ADR/RID Item No: 53c
Hazard No: 80 Trem Card No: 80G15
UN No: UN 2735

Sea
Class: 8 IMO/IMDG Code: 8109-2
UN No: UN 2735 Packing Group: III

Air
IATA/ICAO Class: 8 Packing Group: III
UN No: UN 2735
Packing Instruction (Pass & Cargo): 818 Packing Instruction (Cargo): 820

15. REGULATORY INFORMATION

Chemical name: Cycloaliphatic amine.
Labelling: According to EEC directives relating to packaging and labelling of dangerous substances and UK Chemicals Hazard Information and Packaging for Supply (CHIPS) legislation.

Symbols: (C) Corrosive.
(Xn) Harmful.

Risk phrases: R20/22, Harmful by inhalation and if swallowed.
R34, Causes burns.
R37, Irritating to the respiratory system.
R43, May cause sensitisation by skin contact.

Safety phrases: S26, In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39, Wear suitable protective clothing, gloves and eye/face protection.
S45, In case of accident or if you feel unwell, seek medical advice immediately.

16. OTHER INFORMATION

The information contained in this data sheet is based on present state of knowledge and current national legislation (CHIPS). It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for the particular applications.