

1. IDENTIFICATION OF PREPARATION & OF COMPANY

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

A liquid epoxy resin that is the reaction product of Bisphenol F and Epichlorohydrin.

| Chemicals | Classification | Risk phrases |
|-------------------------|----------------|---------------------|
| Epoxy resin Bisphenol F | Xi, N | R36/38, R43, R51/53 |

The remaining 35% of the composition is a blend of proprietary, non-hazardous chemicals that are trade secret.

3. HAZARDS IDENTIFICATION

Acute effects: May cause skin sensitization by skin contact. Not classified as flammable but will burn. Toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment.

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: For small fires: Carbon dioxide, dry chemical powder, water spray or fog, sand or earth.
For large fires: Foam, water spray or fog.
Unsuitable extinguishing media: Water jet.
Specific fire or explosion hazards: Not classified as flammable but will burn. Carbon monoxide may be evolved if incomplete combustion occurs.
Special fire-fighting protection: Full protective clothing and self-contained breathing apparatus.
Other information: Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions: | Wear adequate personal protective equipment. |
| Environmental precautions: | Prevent from entering soil, waterways and groundwater. Flushings and wash waters must be confined and prevented from entering into soil, waterways and ground water. If material enters drains it should be pumped out into an open vessel. Assistance may be required from emergency services. |
| Methods for cleaning up: | Soak up with absorbent material such as sand and collect in suitable, labelled containers. Residual product may be removed using steam or hot soapy water. Retain washings as contaminated waste. Put leaking containers in a labelled drum or overfill. |

7. HANDLING & STORAGE

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| Handling: | Practice care and caution to avoid skin and eye contact. |
| Storage: | Store in a cool, dry ventilated storage and in closed containers. Palletised loads should be stacked to a minimum of 4 high. |
| Storage temperatures: | Ambient. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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| Engineering controls: | Adequate ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations. |
| Exposure controls: | Not established. |
| Respiratory protection: | Normally not required. In a confined space, wear half mask with organic vapour cartridge and built in particulate filter NPF 20 (gas only). If product is applied by spraying, wear self-contained breathing apparatus. |
| Eye protection: | Chemical safety glasses, splash-proof eye goggles with a full-face shield. Contact lenses should not be worn. |
| Skin protection: | Use protective clothing impervious to this material. Selection of specific items will depend on operation. Use impervious gloves when prolonged or frequently contact could occur. Remove contaminated clothing no later than at the end of the work period and launder before re-use. |
| Hand protection: | Nitrile rubber gloves or butyl rubber gloves, gauntlet type. |

9. PHYSICAL & CHEMICAL PROPERTIES

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| Physical state: | Liquid. |
| Odour: | Slight. |
| Boiling point: | > 200°C |
| Flash point: | > 150°C |
| Auto-ignition temperature: | > 300°C |
| Water solubility: | Negligible. |
| Density: | 1.07 - 1.2g/cc @ 20 - 25°C |
| Viscosity: | 0.6 - 407mPa.s. @ 20 - 25°C |

10. STABILITY & REACTIVITY

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|-----------------------------------|---|
| Stability: | Stable under normal storage conditions. Reacts with strong oxidisers. Polymerises exothermically with amines, mercaptans and Lewis acids at ambient temperature and above. Polymerises in contact with caustic soda. Reacts exothermically with bases (e.g. caustic soda), ammonia, primary and secondary amines, alcohols and acids. |
| Materials to avoid: | Strong acids, bases & oxidising agents. |
| Conditions to avoid: | Caustic soda can induce vigorous polymerisation at temperatures around 200°C. |
| Hazardous decomposition products: | Not expected to form during normal storage. |

11. TOXICOLOGICAL INFORMATION

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| Acute toxicity: | |
| Oral LD50: | > 2,000mg/kg |
| Dermal LD50: | > 2,000mg/kg |
| Eye irritation: | Slight irritant. |
| Skin irritation: | Slight irritant. |
| Inhalation: | Not irritating. |
| Skin sensitisation: | Skin sensitiser. |
| Mutagenicity: | Positive in vitro. Negative in vivo assays. |

12. ECOLOGICAL INFORMATION

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| Mobility: | Skims in water. |
| Degradability: | Not readily biodegradable. |
| Bioaccumulation: | Potential to bioaccumulate. |
| Acute toxicity: | Toxic (fish), $1 < LC50 \leq 10$ mg/l |
| Sewage treatment: | Toxic EC50 > 1 - 10mg/l to organisms in sewage treatment plants. |

13. DISPOSAL CONSIDERATIONS

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| Product: | Recover or recycle if possible. Otherwise incineration or dispose to licensed disposal contractor. |
| Contaminated packaging: | Empty containers, must be drain thoroughly. Rinse three times with suitable solvent. Treat rinsing as for product disposal. After draining, vent in a safe place away from sparks and fire. Send to drum/metal recover. |

14. TRANSPORT INFORMATION

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
(epoxy resin)

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|----------------|---------|------------------|-------|
| Road/rail | | | |
| ADR/RID class: | 9 | ADR/RID Item No: | 11c |
| Hazard No: | 90 | Trem card: | 90G01 |
| UN No: | UN 3082 | | |

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|-------------|---------|----------------|-----|
| Sea | | | |
| IMDG class: | 9 | Packing group: | III |
| UN No: | UN 3082 | | |

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|-------------------------------------|---------|------------------------------|-----|
| Air | | | |
| IATA/ICAO class: | 9 | Packing group: | III |
| UN No: | UN 3082 | | |
| Packing instruction (pass & cargo): | 914 | Packing instruction (cargo): | 914 |

15. REGULATORY INFORMATION

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| Chemical name: | Epoxy resin. |
| 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: | (Xi) Irritant. (N) Dangerous for the environment. |
| Risk phrases: | R36/38, Irritating to eyes and skin. R43, May cause sensitisation by skin contact. R51/53, Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment. |
| Safety phrases: | S24, Avoid contact with skin. S28, After contact with skin, wash immediately with plenty of water. S37/39, Wear suitable gloves and eye/face protection. S61, Avoid release to the environment. Refer to special instructions, safety data sheets. |

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.