

EPOTEC YD 510

1. IDENTIFICATION OF SUBSTANCE

Trade Name: EPOTEC YD 510

Manufacturer/Supplier: Aditya Birla Chemicals (Epoxy Division) 16th Floor Mahathun Plaza Building, 888/160 - 161 Pleonchit Road, Lumpini, Pathumwan, Bangkok 10330 Thailand.

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2. COMPOSITIONS AND INFORMATION ON INGREDIENTS

| Component | CAS Number | % |
|---|-------------|------|
| Reaction product of Epichlorohydrin and Bisphenol A | 025068-38-6 | > 50 |
| Glycidyl ether of C12-C14 alcohol | 68609-97-2 | < 50 |

3. HAZARD IDENTIFICATION

Eye: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.

Skin: Prolonged exposure not likely to cause significant skin irritation. Repeated exposure may cause skin irritation. Has caused allergic skin reaction in humans. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

Ingestion: Single does oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amount incidental to normal handling operations.

Inhalation: Vapors are unlikely due to physical properties.

4. FIRST AID

Eye: Flush eyes with plenty of water.

Skin: Wash off in flowing water or shower.

Ingestion: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

Inhalation: No adverse effects anticipated by this route of exposure.

Note to Physician: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash point 150 °C (closed cup)

Auto ignition temperature Not applicable

Flammability Limits: LFL Not applicable

UFL Not applicable

Hazardous Combustion Products: Under fire conditions polymers decompose. The smoke may contain polymer fragments of varying compositions in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to phenolics, carbon monoxide and carbon dioxide.

Other Flammability Information: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.

Extinguishing Media: Water fog or fine spray, foam, and carbon dioxide, dry chemical.

Fire Fighting Instructions: Keep people away. Isolate fire area and deny unnecessary entry. Do not use direct water stream. May spread fire. Use water spray to cool fire exposed containers and fire-affected zone until fire is out and danger of re-ignition has passed. Move container from fire area if this is possible without hazard. Fight fire from protected location or safe distance. Consider use of unmanned hose holder or monitor nozzles. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. Flushing with water to protect personnel and minimize property damage may move burning liquids. Water fog, applied gently may be used as a blanket for fire extinguishments. Contain firewater run-off if possible. Firewater run-off, if not contained may cause environmental damage.

Protective Equipments for Fire Fighting: Wear positive pressure self-contained breathing apparatus (SCBA) and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Protect People: Isolate area. Clear non-emergency personnel from area.

Protect the Environment: Keep out of irrigation ditches, sewers and water supplies.

Cleanup: Absorb with material such as sand or polypropylene or polyethylene fiber products. Collect in suitable and properly labeled containers. Remove residual using hot soapy water. Residual resin can be removed with solvent. Solvents are not recommended for cleanup unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent MSDS for handling information.

7. HANDLING AND STORAGE

Handling: Avoid use of electric band heaters. Failures of electric band heaters have been reported to cause drums of liquid epoxy resin to explode and catch fire. Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire.

Storage: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Guideline(s): None established.

Engineering Controls: Good general ventilation should be sufficient for most conditions.

Eye Protection: Use safety glasses.

Skin Protection: Use protective clothing impervious to this material. Selection of specific items such as face shields, gloves, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin with soap and water, and launder clothing before reuse.

Respiratory Protection: No respiratory protection should be needed. If respiratory irritation is experienced, use an approved air-purifying respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|------------------------|
| Appearance: | Light yellowish liquid |
| Odor: | Mild epoxy |
| Boiling Point: | Not applicable |
| Vapor Pressure: | Not applicable |
| Vapor Density: | Not applicable |
| Solubility in Water: | None |
| Specific Gravity: | 1.16 |

10. STABILITY AND REACTIVITY

Stability: Stable at ambient temperature.

Conditions to Avoid: Excess heating over long periods of time degrades the resin.

Material to Avoid: Acids, bases, amines and oxidizing agents.

Hazardous Decomposition Products: Refer to section 5 for Hazardous Combustion Products.

Hazardous Polymerization: Will not occur by itself. Polymerization can be catalyzed by aliphatic amines. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat build up.

11. TOXICOLOGICAL INFORMATION

| | |
|---|---------------|
| Acute Oral Toxicity (LD50/Rat): | > 5,000 mg/kg |
| Acute Dermal Toxicity (LD50/Rabbit): | 20,000 mg/kg |

12. ECOLOGICAL INFORMATION

Degradation: Theoretical oxygen demand (ThoD) is calculated to be 2.35 p/p. In the atmospheric environment, material is estimated to have a tropospheric half-life of 1.92 hr. Biodegradation reached in Modified Zahn-Wellens / EMPA Test (OECD Test No. 302B) after 28 days: 12%. 20-Day biochemical oxygen demand (BOD20) is <2.5%.

Ecotoxicity: Material is moderately toxic to aquatic organisms on an acute basis (LC50 / EC50 between 1 and 10 mg/L in most sensitive species). Acute LC50 for water flea *Daphnia magna* is 1.3 mg/L. Acute LC50 for fathead minnow (*Pimephales promelas*) is 3.1 mg/L. Toxicity to aquatic species occurs at concentrations greater than water solubility. Maximum acceptable toxicant concentration (MATC) in water flea *Daphnia magna* is 0.55 mg/L. Growth inhibition threshold in bacteria is >42.6 mg C/L. Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is > 100 mg/L.

13. DISPOSAL CONSIDERATIONS

Disposal: Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all applicable federal, state/provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

14. TRANSPORT INFORMATION

Department of Transportation: For D.O.T. regulatory information, if required, consults transportation regulations, product-shipping papers.

Canadian TDG Information: For TDG regulatory information, if required, consult transportation regulations, product shipping papers.

15. REGULATORY INFORMATION

Notice: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial and local laws and regulations.

U.S. REGULATIONS:

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: An immediate health hazard

This product has been classified as "an immediate health hazard" due to the potential for allergic skin reaction.

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CANADIAN REGULATIONS:

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is: D2B - skin sensitizer

Refer elsewhere in the MSDS for specific warnings and safe handling information.

CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):

All substances in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. OTHER INFORMATION

The information presented herein is based on data considered to be accurate as of date of preparation of the Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.