1. IDENTIFICATION OF SUBSTANCE

Trade Name:  EPOTEC YD 012
Manufacturer/Supplier: Aditya Birla Chemicals (Epoxy Division) 16th Floor Mahathun Plaza Building, 888/160 - 161 Pleonchit Road, Lumpini, Pathumwan, Bangkok 10330 Thailand.
Tel: (662) 2535031-3, 2536882, Fax: (662) 2535030, Web site: www.thaiepoxy.com
For additional information: Development Department, E-mail: epotec@thaiepoxy.com

2. COMPOSITIONS AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaction product of Epichlorohydrin and Bisphenol A</td>
<td>025068-38-6</td>
<td>100</td>
</tr>
</tbody>
</table>

3. HAZARD IDENTIFICATION

Eye: May cause slight transient eye irritation. Solid or dust may cause irritation or corneal injury due to mechanical action.
Skin: Prolonged or repeated exposure not likely to cause significant skin irritation. 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 low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
Inhalation: Vapors are unlikely due to physical properties. Single exposure to dust is not likely to be hazardous.

4. FIRST AID

Eye: Flush eyes with plenty of water, mechanical effects only.
Skin: Wash off in flowing water or shower.
Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
Inhalation: Remove to fresh air if effects occur. Consult a physician.
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 Decomposes prior to flashing.
Auto ignition temperature Not Applicable
Flammable 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: Dense smoke is emitted when burned without sufficient oxygen. Mechanical handling can cause formation of dusts. To reduce the potential for dust explosion, do not allow dust to accumulate.
Extinguishing Media: Foam, water, carbon dioxide, dry chemical.
Fire Fighting Instructions: Keep people away. Isolate fire area and deny unnecessary entry. If material is molten, do not apply direct water stream. Use fine water spray or foam. Soak thoroughly with water to cool and prevent re-ignition. Cool surrounding with water to localize fire zone. Hand held carbon dioxide or dry chemical extinguishers might be used for small fires.
Protective Equipments for Fire Fighting: Wear positive pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Protect People: Clear non-emergency personnel from area. Isolate area. Avoid contact with eyes. Avoid contact with skin and clothing.
Protect the Environment: Keep out of irrigation ditches, sewers and water supplies.
Cleanup: Sweep up. Transfer to suitable and properly labeled containers.

7. HANDLING AND STORAGE

Handling: Good housekeeping and controlling of dusts are necessary for safe handling of product.
Storage: Store in a dry place. For storage information, refer to this product’s Technical Data Sheet.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Guideline(s): None established.
Engineering Controls: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some applications.
Eye Protection: Use safety glasses. If there is a potential for exposure to particles, which could cause mechanical injury to the eye, wear chemical goggles.
Skin Protection: No precaution other than clean body-covering clothing should be needed.
Respiratory Protection: In dusty atmosphere, use an approved dust respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Yellowish solid flakes</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>None</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.18</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
Conditions to Avoid: Product can decompose at elevated temperatures.
Material to Avoid: Acids, bases, amines and oxidizing agents.
Hazardous Decomposition Products: Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide and water. Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.
Hazardous Polymerization: Will not occur by itself. 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

<table>
<thead>
<tr>
<th>Toxicological Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral Toxicity (LD50/Rat)</td>
<td>&gt; 2,000 mg/kg</td>
</tr>
<tr>
<td>Acute Dermal Toxicity (LD50/Rabbit)</td>
<td>&gt; 2,000 mg/kg</td>
</tr>
</tbody>
</table>
12. ECOLOGICAL INFORMATION

Degradation: Based largely or completely on information for similar material. Based on the stringent test guidelines, this material cannot be considered as readily biodegradable, however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Ecotoxicity: Based largely or completely on information for similar material. Material is moderately toxic to aquatic invertebrates on an acute basis (LC50/EC50 between 1 and 10 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 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

U.S. Department of Transportation: This product is not regulated by D.O.T. when shipped domestically by land.

Canadian TDG Information: This product is not regulated by TDG when shipped domestically by land.

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 Hazard Category: This product has been reviewed according to the EPA “Hazard Categories” promulgated under Section 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:
Not to have met any hazard category.

Toxic Substances Control Act (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

CANADIAN REGULATIONS:

WHMIS Information: The Canadian workplace Hazardous Materials Information System (WHMIS) Classification for this product is: This product is not a “Controlled Product” under WHMIS.

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.