



E1A EPOXY RESIN

MATERIAL SAFETY DATA SHEET

Last Revised: 9 December 2024

Section 1: Substance/preparation and company identification

Company:

Warrior Pte Ltd

Contact address:

17 Marsiling Industrial Estate Road 1 #01-11

Singapore 739279

Telephone: +65 6364 5100

E-mail address: war99@singnet.com.sg

Section 2: Composition/information on ingredients

Polymer of epichlorohydrin

and bisphenol A

CAS# 025085-99-8 83-98%

Alkyl glycidyl ether (C12-C14)

CAS# 068609-97-2 2-17%

Section 3: Hazard identification

Emergency Overview

*** Yellow liquid. Mild odor. May cause allergic skin reaction.***

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE

- May cause slight temporary eye irritation. Corneal injury is unlikely.

SKIN

- Has caused allergic skin reactions in humans. Prolonged exposure not likely to cause significant skin irritation. Prolonged skin contact is unlikely to result in the absorption of harmful amounts.

INGESTION

- Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

INHALATION

- Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

SYSTEMIC EFFECTS

- Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.

CANCER INFORMATION

- Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol (DGEBA). Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBA is carcinogenic. Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBA is not classified as a carcinogen.



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TERATOLOGY

BIRTH DEFECTS

- DGEBPA did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

REPRODUCTIVE EFFECTS

- In animal studies, DGEBPA-based epoxy resins have been shown not to interfere with reproduction.

Section 4: First aid

EYES

- Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN

- Wash skin with plenty of water. Items which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands should be disposed of properly.

INGESTION

- If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION

- Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN

- Consider additional thorough skin wash with mild non-abrasive soap and plenty of warm water for at least 15 minutes. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5: Fire fighting measures

FLAMMABLE PROPERTIES

- FLASH POINT: 350-375°F, 176.7-190.6°C
- METHOD USED: PMCC, ASTM D-93
- AUTOIGNITION TEMPERATURE: Not applicable

FLAMMABILITY LIMITS

- LFL: Not applicable
- UFL: Not applicable



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HAZARDOUS COMBUSTION PRODUCTS

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: phenolic compounds, 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, dry chemical fire extinguishers, carbon dioxide fire extinguishers and foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

FIRE FIGHTING INSTRUCTIONS

- Keep people away. Isolate fire area and deny unnecessary entry.
- Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed.
- 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.
- Do not use direct water stream. May spread fire.
- Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS

- 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.

Section 6: Accidental release measures (See Section 15 for Regulatory Information)

Protect People

Keep unnecessary and unprotected personal from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure controls/Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Protect The Environment

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See section 12, Ecological Information.



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Clean UP

Absorb with material such as sand. Collect in suitable and properly labeled containers. Remove residual with soap hot water. Solvents are not recommended for clean up unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent SDS for handling information and exposure guidelines.

Section 7: Handling and Storage

HANDLING

Avoid contact with skin and clothing. Wash thoroughly after handling. See section 8, Exposure controls/personal protection.

STORAGE

No specific requirements. Additional storage information on this product may be obtained by calling your Dow sales or customer service contact. Ask for a product brochure.

Section 8: Exposure Controls/Personal Protection

ENGINEERING CONTROLS

Good general ventilation should be sufficient for most conditions.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION

Use safety glasses.

Skin Protection

Use protective clothing chemically resistant to this material. Selection of specific items such as face-shield, gloves, boots, apron or full body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Respiratory Protection

For most conditions, no respiratory protection should be needed; however if discomfort is experienced, use an approved air-purifying respirator.

Section 9: Physical and Chemical Properties

Appearance/Physical State: Yellow liquid

Odor: Mild

Vapor Pressure: 0.06mm@70°F (based on alkyl glycidyl ether)

Vapor Density: Not applicable

Boiling Point: >300F

Solubility In Water: None

Specific gravity: 1.11-1.14



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Stability And Reactivity

Chemical Stability : Thermally stable at typical use temperatures.

Conditions To Avoid : Avoid temperatures above 350°C/662°F.

Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

Incompatibility With Other Materials

Avoid contact with oxidizing materials, acids and bases. Avoid unintended contact with amines.

Hazardous Decomposition Products

Decomposition products depend on temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide and water.

Hazardous Polymerization

Will not occur by itself. Masses of more than one pound (0.5kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat buildup.

Section 10: Toxicological Information

See section 3 for potential health effects. For detailed toxicological data, write or call the address or non-emergency number shown in section 1.

SKIN:

Based on information for components, the LD 50 for skin absorption in rabbits is expected to be >2000mg/kg.

INGESTION:

The oral LD 50 for rats is >2000mg/kg

MUTAGENICITY:

Animal genetic toxicity studies for DEGBPA-based resins have been negative while in vitro assays have given mixed results. For aliphatic glycidyl ether: in vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Section 11: Ecological Information

Environmental Fate

Movement & Partitioning: Based largely or completely on information for diglycidyl ether of bisphenol A: bio concentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5. Potential for mobility in soil is low. (Koc between 500 and 2000)

Degradation & Persistence: Based largely or completely on information for diglycidyl ether of bisphenol A: biodegradation reached in modified Zahn-Wellens /EMPA Test (OECD Test No.302B) after 28days.



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Other Information

- Any other intended applications should be discussed with the manufacturer.
- If you have any queries relating to this MSDS, its contents or any other product safety related questions, please write to the following e-mail address: war99@singnet.com.sg
- The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.