



E1BW EPOXY HARDENER

MATERIAL SAFETY DATA SHEET

LAST REVISED: 25 AUGUST 2026

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

COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Components	EINECS / ELINCS	CAS Number	Concentration (Weight)	Classification
triethylenetetramine	203-950-6	112-24-3	< 5 %	C R21 ; R34 ; R43 ; R52/53

Description: Modified aliphatic polyamide amine

HAZARD IDENTIFICATION

Classification

R36/38: Irritating to eyes and skin.

R43: May cause sensitization by skin contact.

Emergency Overview

May cause sensitization by skin contact.

Potential Health Effects

Inhalation:

Harmful if inhaled and may cause delayed lung injury.

Skin contact:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Chronic Health Hazard:

This product contains no listed carcinogens according to Directive 67/548/EEC, IARC, ACGIH and/or NTP in concentrations of 0.1 percent or greater. May cause allergic skin reaction.

Aggravated Medical Condition Target Organs:

Skin disorders and Allergies. Skin. Eyes. Respiratory system.

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FIRST AID MEASURES

General advice:

Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

Eye contact:

Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.

Skin contact:

Wash off immediately with plenty of water for at least 20 minutes. Take off contaminated clothing and shoes immediately. NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.

Ingestion:

Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side. Inhalation : Move to fresh air.

FIREFIGHTING MEASURES

Suitable extinguishing media:

Alcohol-resistant foam, carbon dioxide (CO₂), dry chemical, dry sand or limestone powder.

Specific hazards:

May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Ammonia gas may be liberated at high temperatures. In case of incomplete combustion, an increased formation of oxides of nitrogen (NO_x) is to be expected. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.

Special protective equipment for fire-fighters:

Avoid contact with the skin. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.

ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

Environmental precautions:

Construct a dike to prevent spreading.

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Methods for cleaning up:

Approach suspected leak areas with caution. Contact Air Products' Emergency Response Center for advice. Place in appropriate chemical waste container.

Additional advice:

Open enclosed spaces to outside atmosphere. If possible, stop flow of product.

HANDLING AND STORAGE

Handling

1. Do not use sodium nitrite or other nitrosating agents in formulations containing this product.
Suspected cancer-causing nitrosamines could be formed.
2. Emergency showers and eye wash stations should be readily accessible.
3. Adhere to work practice rules established by government regulations.
4. Use personal protective equipment.
5. When using, do not eat, drink or smoke.

Storage

1. Do not store near acids. Keep away from alkalis. Keep containers tightly closed in a dry, cool and well-ventilated place.
2. Do not store in reactive metal containers.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures:

1. Provide readily accessible eye wash stations and safety showers.
2. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment:

Respiratory protection:

Wear appropriate respirator when ventilation is inadequate.

Hand protection:

Nitrile rubber. Impervious gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.

Eye protection:

Chemical safety glasses.

Skin and body protection:

Impervious clothing.

Environmental exposure controls:

Construct a dike to prevent spreading.

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Special instructions for protection and hygiene:

1. Provide readily accessible eye wash stations and safety showers.
2. Wash at the end of each workshift and before eating, smoking or using the toilet.
3. Remove contaminated clothing.
4. Drench affected area with water for at least 15 minutes.

Exposure Limit

Acetic Acid	Time Weighted Average: EU ELV	10 ppm	25 mg/m ³
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PHYSICAL/CHEMICAL PROPERTIES

Form: Liquid
Color: Amber
Odor: Ammoniacal
Relative Density: 1.07

STABILITY AND REACTIVITY

Stability:

Stable under normal conditions.

Materials to avoid:

Sodium hypochlorite, organic acids (i.e. acetic acid, citric acid etc.), mineral acids, amines, reducing agents, oxidizing agents, nitrous acid and other nitrosating agents

Reactivity:

Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.

Incompatible with bases.

Reaction with peroxides may result in violent decomposition of peroxide, possibly creating an explosion.

CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.

Hazardous Decomposition Products:

Organic acid vapors, nitric acid, ammonia, nitrogen oxides, carbon monoxide, carbon dioxide, nitrosamine

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TOXICOLOGICAL INFORMATION

Acute health hazard

Ingestion - Components Triethylenetetramine: LD50 : 2,780 mg/kg, Species: Rat

Inhalation: No data available on the product itself.

Skin - Components Triethylenetetramine: LD50 : 550 mg/kg, Species: Rabbit

Sensitization: Sensitization has occurred in laboratory animals after repeated exposures.

Results from a battery of short-term genotoxicity tests on this material or its components indicate mutagenic activity.

ECOLOGICAL INFORMATION

Aquatic toxicity:

No data is available on the product itself.

Toxicity to other organisms:

No data available.

Mobility:

No data available.

Bioaccumulation:

No data is available on the product itself.

DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Contact supplier if guidance is required.

Contaminated packaging:

Dispose of container and unused contents in accordance with federal, state, and local requirements.

TRANSPORTATION INFORMATION

ADR

Proper shipping name : Not Regulated

Class :

UN/ID No. :

Packing group :

IATA

Proper shipping name: Not Regulated

Class :

UN/ID No. :

Packing group :

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IMDG

Proper shipping name: Not Regulated

Class :

UN/ID No. :

Packing group : RID

Proper shipping name: Not Regulated

Class :

UN/ID No. :

Packing group :

REGULATORY INFORMATION

Hazard Symbol

- R-phrase(s) - R36/38 Irritating to eyes and skin. R43 May cause sensitization by skin contact.
- S-phrase(s) - S24 Avoid contact with the skin. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37 Wear suitable gloves.

Country	Regulatory List	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Not on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

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OTHER INFORMATION

R21 Harmful in contact with skin. R34 Causes burns.

R43 May cause sensitization by skin contact.

R52/53 Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

- 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.

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