

MATERIAL SAFETY DATA SHEET

Product Name: Marineepoxy Resin

Effective Date: 04-01-02

Product Code: E_res

1. INGREDIENTS:

Reaction products of Epichlorohydrin and Bisphenol A

CAS # 025-085-99-8 >80%

Alkylglycidyl Ether

CAS # 068609-97-2 <20%

Benzyl Alcohol

CAS # 100-51-6 <20%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not Hazardous per this OSHA Standard may be listed. Where proprietary ingredients shows, the identity may be made available as provided in this standard.

2. PHYSICAL DATA:

BOILING POINT: N/A

VAP PRESS: N/A

VAP DENSITY: N/A

SOL. IN WATER: insoluble

SP. GRAVITY: 1.13 +or- 0.01

APPEARANCE: light amber colored liquid

ODOR: faint epoxy odor

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 245 °F

METHOD USED: PMCC

FLAMMABLE LIMITS:

LFL: NA

FL: NA

EXTINGUISHING MEDIA: foam, CO2, dry chemical

FIRE AND EXPLOSION HAZARDS: none

FIRE FIGHTING EQUIPMENT: Wear positive pressure self-contained breathing apparatus.

4. REACTIVITY DATA:

STABILITY: stable

CONDITIONS TO AVOID: Excess heating over long periods of time.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Base.

HAZARDOUS DECOMPOSITION PRODUCTS: The by-products expected in incomplete prolysis or combustion of epoxy resins are mainly phenolics, carbon monoxide, and water. The thermal decompression products of epoxy resins therefore should be treated as potentially hazardous substances. Appropriate precautions should be taken.

HAZARDOUS POLYMERIZATION: Will not occur by itself but masses more than 1 pound of product plus aliphatic amine will cause irreversible polymerization with considerable heat buildup.

5. ENVIROMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Soak up in absorbent material and collect in suitable containers. Residual may be removed using steam or hot soapy water.

DISPOSAL METHOD: Burn in adequate incinerator or bury in an approved landfill; in accordance with local, state, and federal regulations.

6. HEALTH HAZARD DATA:

EYE: Minor transient irritation. No corneal injury is likely.

SKIN CONTACT: May cause allergic skin reaction in susceptible individuals. Prolonged exposure not likely to cause significant skin irritation. Repeated exposure may cause skin irritation.

SKIN ABSORPTION: A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD50 for skin absorption in rabbits is 20,000 mg/kg.

INGESTION: Low acute oral toxicity, LD50 (rat) greater than 400 mg/kg. No hazards anticipated from ingestion incidental to industrial exposure.

INHALATION: Vapors are unlikely due to physical properties. Not a problem unless heated to high temperature.

SYSTEMIC AND OTHER EFFECTS: Except for skin sensitization, repeated exposures to low molecular weight epoxy resin of this type are not anticipated to cause any significant adverse effects.

7. FIRST AID:

EYES: Irrigation of the eye immediately with water for five minutes is good safety practice.

SKIN: Contact will probably cause no more than irritation. Wash off in flowing water or shower. Wash clothing before reuse.

INGESTION: Low in toxicity. No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

INHALATION: Low toxicity. No adverse effects anticipated. Provide fresh air and rest.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

8. HANDLING PRECAUTIONS:

VENTILATION: Good ventilation is usually adequate for most operations.

RESPIRATORY PROTECTION: None needed.

SKIN PROTECTION: Use impervious gloves when prolonged or frequently repeated contact could occur.

EYE PROTECTION: Use safety glasses.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Practice good caution and personnel cleanliness to avoid skin and eye contact. Avoid breathing vapors of heated material.

10. NFPA HAZARD RATING:

(4=EXTREME 3=HIGH 2=MODERATE 1=SLIGHT 0=INSIGNIFICANT)

HEALTH-1

FIRE -1

REACTIVITY-0

SPECIFIC-0

II. REGULATORY INFORMATION:

STATUS ON SUBSTANCE LISTS:

The concentrations shown in this document are maximum or ceiling levels (expressed in weight %, unless otherwise specified) to be used for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA

COMPRHENSIVE ENVIRONMENTAL RESPONSE. COMPENSATION. AND LIABILITY ACT OF 1980 (CERCLA):

Requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at level, which could require reporting under the statute are:

Chemical Name	CAS Number	%By Weight	RQ
NONE			

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SAR) TITLE III:

Sections 301-304 require emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQS) in 40CFR 355. Components present in this product at level, which could require reporting under the statute are:

Chemical Name	CAS Number	%By Weight
NONE		

Sections 311-3.12 require products to be reviewed and applicable EPA Hazard Definitions be identified.

EPA HAZARD CLASSIFICATIONS:

Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard
No	No	No	No	No

Section 313 requires submission of annual reports of releases of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSD's that are copied and distributed for this material. Components present in this product at level, which could require reporting under the statute are:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% By Weight</u>
NONE		

If you are unsure if you must report more information, call the EPA Emergency Planning and Right-To-Know

Hot line: 800-535-0202 or 202-479-2449.

TOXIC SUBSTANCE CONTROL ACT (TSCA):

The components of this product are contained on the chemical substance inventory list.

OTHER REGULATORY INFORMATION:

D.O.T. Shipping Name:

Not Regulated

The information herei is given in good faith, but no warranty expressed or implied is made.

MATERIAL SAFETY DATA SHEET

Product Name: Marinepoxy Fast Hardener
E_har_fast

Effective Date: 04-01-02

Product Code:

I. INGREDIENTS:

Modified Cycloaliphatic Amine Reaction Products CAS#: Proprietary
This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200) in addition, other substances not hazardous per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

2. PHYSICAL DATA:

BOILING POINT: > 400°F
VAP PRESSURE: <1 mmHg@ 20°C, 68°F
VAP DENSITY: >1
SOL. IN WATER: Moderately soluble
SF. GRAVITY: 0.96
APPEARANCE: Pale straw colored liquid
ODOR: Amine odor

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 200°F, 93°C
METHOD USED: PMCC
FLAMMABLE LIMITS
LFL: Not determined
UFL: Not determined
EXTINGUISHING MEDIA: Water fog, alcohol foam, CO2, dry chemical.
FIRE & EXPLOSION HAZARDS: Use full protective clothing (see Section 8)
FIRE-FIGHTING EQUIPMENT: Use a positive pressure, self-contained breathing apparatus.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO A VOID) Can react strongly with epoxy resins at elevated temperatures.
INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Epoxy resins under uncontrolled conditions.
HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides when burned.
HAZARDOUS POLYMERIZATION: Will not occur.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Large spill: dike up and pump into appropriate containers.
Small spill: use non-combustible absorbent material/sand and shovel into suitable containers.
DISPOSAL METHOD: Large quantities should be recovered. Collect small quantities in waste metal drums for removal to an approved landfill, or incinerate in accordance with local, state, and federal regulations.

6. HEALTH HAZARD DATA:

EYE: May cause severe corneal injury, which may result in permanent impairment of vision, even blindness. Vapors may irritate eyes.
SKIN CONTACT: May cause severe injury to skin following prolonged or repeated contact, and may cause skin sensitization or other allergic reactions.
SKIN ABSORPTION: A single prolonged exposure may result in the material being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is 880 mg/kg.
INGESTION: Single dose oral toxicity is low. The oral LD50 for female rats is >1000 mg/kg. Ingestion may cause gastrointestinal irritation or ulceration. Ingestion may cause burns of mouth and throat.
INHALATION: May cause respiratory sensitization or asthma in susceptible individuals. Excessive exposure may cause irritation to respiratory tract.
SYSTEMIC AND OTHER EFFECTS: Results of in vitro ("test tube") mutagenicity test have been negative.

7. FIRST AID:

EYES: Irrigation of the eye immediately with water for at least 30 minutes is required. Promptly seek medical attention.

SKIN: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing, preferably under a safety shower. Seek medical attention immediately. Avoid prolonged or repeated contact to skin. Wash thoroughly after handling.

INGESTION: Do not induce vomiting. Give large amounts of water or milk if available and transport to medical facility.

INHALATION: Remove to fresh air if effects occur. Consult medical personnel.

NOTE TO PHYSICIAN: Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as any thermal burn after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

7. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE: None established.

VENTILATION: Control airborne concentration below the exposure guideline. Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and clothing before reuse. Contaminate leather items, such as shoes, belts and watchbands, should be removed and destroyed.

EYE PROTECTION: Use chemical goggles. If vapor causes eye irritation, use full-face respirator. Eye wash fountain should be located in immediate work area.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Ground all transfer equipment. Hold bulk storage under a nitrogen blanket. This product should not come in contact with copper or copper-bearing alloys. Good general housekeeping procedure should be followed.

10. NFPA HAZARD RATING:

(4 = EXTREME 3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNIFICANT)
HEALTH-2
FIRE-1
REACTIVITY-0
SPECIFIC-0

11. REGULATORY INFORMATION:

STATUS ON SUBSTANCE LISTS:

The concentrations shown in this document are maximum or ceiling levels (expressed in weight %, unless otherwise specified) to be used for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA):

Requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at level, which could require reporting under the statute are:

Chemical Name	CAS Number	%ByWeight	RQ
NONE			

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SAR) TITLE III:

Section 301-304 require emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQS) in 40 CFR 355. Components present in this product at level, which could require reporting under the statute are:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>%ByWeight</u>
NONE		

Sections 311-312 require products to be reviewed and applicable EPA Hazard Definitions are identified.

EPA HAZARD CLASSIFICATIONS:

<u>Acute Hazard</u>	<u>Chronic Hazard</u>	<u>Fire Hazard</u>	<u>Pressure Hazard</u>	<u>Reactive Hazard</u>
Yes	Yes	No	No	No

Section 313 requires submission of annual reports of releases of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSD's that are copied and distributed for this material. Components present in this product at level, which could require reporting under the statute are:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% By Weight</u>
NONE		

If you are unsure if you must report more information, call the EPA Emergency Planning and Right To-Know Hot line: 800-535-0202 or 202-4792449.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The components of this product are contained on the chemical substance inventory list.

OTHER REGULATORY INFORMATION:

D.O.T. Shipping Name: Not Regulated

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MATERIAL SAFETY DATA SHEET

Product Name: Marinepoxy Slow Hardener
E_har_slow

Effective Date: 04-01-02

Product Code:

1. **INGREDIENTS:**

Polyamine CAS# 140-31-8 <50%

Alkylphenol CAS# 25154-52-3 <50%

The balance of ingredients is trade secrets

This document is prepared pursuant to the OSHA Hazard Communication Standard

(29 CFR 1910.1200) in addition, other substances not hazardous per this OSHA Standard may be listed.

Where proprietary ingredient shows, the identity may be made available as provided in this standard

2. **PHYSICAL DATA:**

BOILING POINT: 430°F, 221°C

VAP PRESSURE: <1 mmHg@ 20°C, 68°F

VAP DENSITY: >1

SOL. IN WATER: Moderately soluble

SP. GRAVITY: 0.96-0.97

APPEARANCE: Pale straw colored liquid

ODOR: Moderate amine odor.

3. **FIRE AND EXPLOSION HAZARD DATA:**

FLASH POINT: 200°F, 93°C

METHOD USED: PMCC

FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

EXTINGUISHING MEDIA: Alcohol foam, CO2, dry chemical.

FIRE & EXPLOSION HAZARDS: Use full protective clothing (see Section 8)

FIRE-FIGHTING EQUIPMENT: Use a positive pressure, self-contained breathing apparatus.

4. **REACTIVITY DATA:**

STABILITY: (CONDITIONS TO AVOID) Can react strongly with epoxy resins at elevated temperatures.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Epoxy resins under uncontrolled conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides when burned.

HAZARDOUS POLYMERIZATION: Will not occur.

5. **ENVIRONMENTAL AND DISPOSAL INFORMATION:**

ACTION TO TAKE FOR SPILLS/LEAKS: Large spill: dike up and pump into appropriate containers.

Small spill: use non-combustible absorbent material/sand and shovel into suitable containers.

DISPOSAL METHOD: Large quantities should be recovered. Collect small quantities in waste metal drums for removal to an approved landfill, or incinerate in accordance with local, state, and federal regulations.

6. **HEALTH HAZARD DATA:**

EYE: May cause severe corneal injury, which may result in permanent impairment of vision, even blindness. Vapors may irritate eyes.

SKIN CONTACT: May cause severe injury to skin following prolonged or repeated contact, and may cause skin sensitization or other allergic reaction.

SKIN ABSORPTION: A single prolonged exposure may result in the material being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is 880 mg/kg.

INGESTION: Single dose oral toxicity is low. The oral LD50 for female rats is >1000 mg/kg. Ingestion may cause gastrointestinal irritation or ulceration. Ingestion may cause burns of mouth and throat.

INHALATION: May cause respiratory sensitization or asthma in susceptible individuals. Excessive exposure may cause irritation, to respiratory tract.

SYSTEMIC AND OTHER EFFECTS: Results of in vitro ("test tube") mutagenicity test have been negative and positive.

7. FIRST AID:

EYES: Irrigation of the eye immediately with water for at least 30 minutes is required. Promptly seek medical attention.

SKIN: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing, preferably under a safety shower. Seek medical attention immediately. Avoid prolonged or repeated contact to skin. Wash thoroughly after handling.

INGESTION: Do not induce vomiting. Give large amounts of water or milk if available and transport to medical facility.

INHALATION: Remove to fresh air if effects occur. Consult medical personnel.

NOTE TO PHYSICIAN: Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

7. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE: None established.

VENTILATION: Control airborne concentration below the exposure guideline. Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline.

When respiratory protection is required for certain operations, use an approved air-purifying respirator.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and clothing before reuse. Contaminate leather items, such as shoes, belts and watchbands, should be removed and destroyed.

EYE PROTECTION: Use chemical goggles. If vapor causes eye irritation, use full-face respirator. Eye wash fountain should be located in immediate work area.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Ground all transfer equipment. Hold bulk storage under a nitrogen blanket. This product should not come in contact with copper or copper-bearing alloys. Good general housekeeping procedure should be followed.

10. NFPA HAZARD RATING:

(4 = EXTREME 3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNIFICANT)

HEALTH-2

FIRE-1

REACTIVITY-0

SPECIFIC-0

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Chemical Name _____ CAS Number _____

NONE

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Chemical Name CAS Number

NONE

Sections 311-311 require products to be reviewed and applicable EPA Hazard Definitions are identified.

EPA HAZARD CLASSIFICATIONS:

<u>Acute Hazard</u>	<u>Chronic Hazard</u>	<u>Fire Hazard</u>	<u>Pressure Hazard</u>	<u>Reactive Hazard</u>
Yes	Yes	No	No	No

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Chemical Name CAS Number % By Weight

NONE

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