



Material Safety Data Sheet
A-4 Hardener

1. Chemical Product and Company Identification

Product Name: A-4 Hardener
Product Description: Liquid Epoxy Hardener
Company: Cast-Coat, Inc. 354 West Street W. Bridgewater, MA 02379
Telephone: 1-800-527-4502 or 1-508-587-4502
Emergency Contact: Chemtrec: (domestic) 1-800-424-9300 (international) 1-703-527-3887

2. Composition / Information on Ingredients

Components	CAS #	%
3,3'-oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	≥ 98
2-(2-(3-aminopropoxy)ethoxy)ethanol	112-33-4	≤ 1

3. Hazards Identification

Eye Contact: Corrosive to the eyes and may cause severe damage, including blindness. Vapors may be irritating.

Skin Contact: Corrosive to the skin. May cause skin sensitization. May be toxic if absorbed through the skin.

Inhalation: Vapors / mists may be corrosive to the upper respiratory tract. Repeated or prolonged exposure can result in lung damage.

Ingestion: Not expected to be a relevant route of exposure, however, corrosive and may cause severe and permanent damage to the mouth, throat and stomach.

Aggravated Medical Conditions: Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Pre-existing respiratory and skin allergies may be increased from exposure to this product.

4. First Aid Measures

General Advise: Good practice requires that gross amounts of any chemical be removed from the skin as soon as practical, especially before eating or smoking.

Eye Contact: Immediately flush eyes with water for at least 30 minutes. Seek medical attention.

Skin Contact: Remove contaminated clothing and wipe excess from skin. Promptly wash with soap and water for 15 minutes. Seek medical attention if irritation persists.

Inhalation: Move to fresh air and provide oxygen if necessary.

Ingestion: Rinse mouth with water. If conscious, give small quantities of water to drink. Do not induce vomiting. If vomiting occurs, keep victim's head below hips to prevent vomit from entering lungs. Seek medical attention.



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5. Fire-Fighting Measures

Flashpoint:	139' C
Autoignition Temperature:	260' C
Flammability limits in air - lower:	1.1 % (V)
Flammability limits in air – upper:	4.5 % (V)
Extinguishing Media:	Carbon dioxide (CO ₂), dry chemical, water fog or “alcohol foam“
Protective Equipment:	Do not enter confined space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots). Use self contained, positive pressure breathing apparatus.
Specific Hazards:	Decomposition and combustion products may be toxic. Containers exposed to intense heat should be cooled with water to avoid vapor pressure buildup.

6. Accidental Release Measures

Personal Protection:	Eyes -	Wear splash proof chemical goggles.
	Skin -	Wear impervious gloves and protective clothing to prevent skin contact.
	Inhalation:	Use NIOSH approved respirator suitable for organic vapors.
Environmental Concerns:	Construct a dike to prevent from entering sewers, rivers and waterways.	
Clean Up:	Soak up residue with absorbent material and shovel into non leaking containers.	

7. Handling and Storage

Handling:	Good practice requires that gross amounts of any chemical be removed from the skin as soon as practical, especially before eating or smoking. Wear splash proof chemical goggles, impervious gloves and protective clothing to prevent skin contact. Emergency eye wash stations should be readily accessible.
Ventilation:	Provide effective mechanical exhaust. Wear NIOSH approved respirator suitable for organic vapors in the absence of ventilation.
Storage:	Store in a cool, dry location in tightly sealed containers. Keep away from open flame and high temperatures. Do not pressurize containers to empty them.



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8. Exposure Controls/Personal Protection

Engineering Controls:	Provide effective mechanical exhaust to ensure concentration levels are below exposure limits.
Respiratory Protection:	Wear NIOSH approved air purifying respirator in the absence of ventilation.
Eye Protection:	Wear safety goggles or safety glasses with side shields. Emergency eye wash stations should be readily accessible.
Skin Protection:	Wear chemical resistant impervious gloves and protective clothing such as an apron to prevent skin contact.

9. Physical and Chemical Properties

Appearance:	Liquid
Color:	Clear to Amber
Odor:	Amine
Specific Gravity:	0.98
Vapor Pressure:	< 1.00 mmHg at 20° C
Solubility in Water:	Miscible
Flashpoint:	139° C
VOC Content:	< 0.1% by weight

10. Stability and Reactivity

Stability:	Stable under normal conditions.
Materials to Avoid:	Avoid heat, flame and strong oxidizing agents.
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide, Nitrous oxide.
Comments:	Hazardous polymerization will not occur.

11. Toxicological Information

3,3'-oxybis(ethyleneoxy)bis(propylamine), 2-(2-(3-aminopropoxy)ethoxy)ethanol:

Oral:	LD50	3,160 mg / kg	species: rat
Dermal:	LD50	> 2,150 mg / kg	species: rat



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12. Ecological Information

Inherent Biodegradability:	Zahn-Wellens -	< 20 %	(Difficult to eliminate)
Golden Orfe,	Static 96 hour LC50 -	220-460 mg / L	(Practically nontoxic)
Daphnid,	Static 48 hour EC50 -	220 mg / L	(Practically nontoxic)
Acute algal toxicity,	72 hour EC50 -	69 mg / L	(Test rating not found)
Toxicity to bacteria -	EC50, (17H)	220 mg / L	(Test rating not found)

13. Disposal Considerations

Comments: Dispose of in accordance with federal, state and local regulations. Incinerate or bury in a RCRA licensed facility. Do not discharge into drains, waterways, sewers, or groundwater.

RCRA: D002

14. Transportation Information

DOT: UN 2735
Amines, Liquid, Corrosive, N.O.S.
(Trioxatridecanediamine)
8, II
ERG - 153

IMDG: UN 2735
Amines, liquid, Corrosive, N.O.S.
(Trioxatridecanediamine)
8, II

IATA: UN 2735
Amines, Liquid, Corrosive, N.O.S.
(Trioxatridecanediamine)
8, II

15. Regulatory Information

TSCA : All ingredients are listed or exempt

HSC Classification: Irritating material, Sensitizing material, Corrosive material

Sara Section 312 Hazard Classification: Chronic health hazard, Acute health hazard

Sara Section 313: None

California prop. 65: None

Hazard Ratings: Health Fire Reactivity
3 1 0

WHMIS Classification: D-2A, D-2B, Class E – Corrosive material



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16. Other Information

All information appearing herein is based upon data obtained from the manufacturer and / or recognized technical sources. While the information is believed to be accurate, Cast-Coat makes no representations as to its accuracy or sufficiency. Conditions of use are beyond the control of Cast-Coat and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their purposes. Cast-Coat, Inc. assumes no responsibility for injury from the use of the product described herein.

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