Material Safety Data Sheet

B-4 Hardener

1. Product and Company Information

Product Name: B-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 #	%	OSHA PEL	ACGIH PEL
Triethylenetetramine	112-24-3	>90	none established	

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.

Material Safety Data Sheet

B-4 Hardener

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: Do not induce vomiting. If conscious, give one glass of water. Seek medical attention.

5. Fire-Fighting Measures

Extinguishing Media: Water fog or "alcohol foam", Dry chemical, or carbon dioxide (CO2). Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.

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: Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. Nitrogen oxides and nitrogen containing organic compounds may be released upon combustion.

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.

Material Safety Data Sheet

B-4 Hardener

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.

8. Exposure Controls/Personal Protection

Engineering Measures: Provide readily accessible eye wash stations. Provide effective mechanical exhaust.

Personal Protective Equipment:

Eyes - Wear splash proof chemical goggles.
Skin - Wear impervious gloves. Wear protective clothing to prevent skin contact.
Inhalation - Wear NIOSH approved respirator suitable for organic vapors in the absence of ventilation.

Comments: Promptly remove contaminated clothing. Wash before reuse. Destroy contaminated leather and absorbent shoes.

9. Physical and Chemical Properties

Appearance:	Liquid
Color:	Clear to Amber
Odor:	Amine
Specific Gravity:	0.98
Vapor Pressure:	< 0.01 mmHg at 20’ C
Solubility in Water:	Soluble
Flashpoint:	> 300’ F (149’ C)

Material Safety Data Sheet

B-4 Hardener

10. Stability and Reactivity

Stability: Stable under normal conditions.

Materials to Avoid: Avoid heat, flame and strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, Nitrous oxides and unidentified organic compounds may be formed during combustion.

Comments: Hazardous polymerization will not occur.

11. Toxicological Information

Acute Health Hazard:

Ingestion:	LD50	2.5 g / kg	species: rat
Skin:	LD50	805 mg / kg	species: rabbit
Inhalation:	LC50	no data available	

Chronic Health Hazard: Triethylenetetramine has been found to be a direct acting mutagen in the Ames assay. It gave positive results with and without activation. Triethylenetetramine was phototoxic and teratogenic when fed to rats at 0.83 % and 1.67 % of diet. When applied dermally to the skin of pregnant guinea pigs, there was a 90 % abortion rate or death of fetus with developmental anomalies. These effects are believed to be secondary to copper deficiency, resulting from the chelating activity of Triethylenetetramine.

12. Ecological Information

Biodegradability: This product is resistant to biodegradation in biological waste water treatment plants. This product could be toxic to the biomass in a treatment plant.

Aquatic Toxicity: This product could be toxic to fish.

13. Disposal Considerations

Comments: Dispose of in accordance with federal, state and local regulations.

Material Safety Data Sheet

B-4 Hardener

14. Transportation Information

D.O.T. Classification: Triethylenetetramine
8, UN 2259, II

Emergency Response Guide: 153

15. Regulatory Information

The components of this product are listed on the EPA/TSCA inventory of chemical substances.

Sara Title III Information

State Regulatory Information

EHS RQ	EHS TPQ	SEC-313	313 Category
*1	*2	*3	*4

*1 = Reportable quantity of extremely hazardous substance, Sec 302
*2 = Threshold planning quantity, extremely hazardous substance, Sec 302
*3 = Toxic chemical, Sec 313
*4 = Category as required by Sec 313 (40 CFR 372.65 C), must be used on toxic release inventory form.

EPA Sara Title 312 Hazard Classification: Chronic health hazard, Acute health hazard

State Regulatory Information

Component	CAS #	%	State Code
Triethylenetetramine	112-24-3	>90	CA, FL, NJ, MA, PA

CA = California hazardous substance list
FL = Florida substance list
MA = Massachusetts substance list
PA = Pennsylvania hazardous substance list
NJ = New Jersey hazardous substance list

Hazard Ratings:

	Health	Fire	Reactivity
HMIS	3	1	0

WHMIS Classification: This product is classified as a Class E – Corrosive material.

16. Other Information

The information and / or percentages in this MSDS are not intended for use in preparing specifications. Please contact Cast-Coat, Inc. before writing specifications.

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.

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Title: Technical Director

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