SAFETY DATA SHEET

1.0 IDENTIFICATION

1.1 GHS product identifier: 824 Hardener

1.2 Other means of identification: Aliphatic Amine Blend

1.3 Recommended use of the chemical and restrictions on use: N/A

1.4 Supplier's details: CASS POLYMERS OF MICHIGAN, INC.
815 WEST SHEPHERD STREET
CHARLOTTE MI 48813 USA
INFORMATION PHONE NUMBER: (248) 588-2270

1.5 Emergency phone number: (703) 527-3887(Call Collect)

2.0 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:
Skin Corrosion/Irritation 1B

2.2 GHS label elements:

Signal Word: Danger
Hazard Statement: Causes severe skin burns and eye damage
Prevention: Do not breathe dusts or mists. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage: Store locked up.
Disposal: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.

2.3 Other hazards which do not result in classification: Flammable Liquid

2.4 Hazards Material Information System (United States):

Health	**3**
Flammability	**1**
Physical Hazard	**0**

Hazard Codes: *=Chronic Hazard 0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard

3.0 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Chemical Identity	CAS No.	Concentration
Triethylenetetramine	112-24-3	40% - 50%
Polyoxypropylenediamine	9046-10-0	30% - 40%
Propoxylated Triethylenetetramine	26950-63-0	20% - 30%

4.0 FIRST-AID MEASURES

4.1 Description of necessary first-aid measures:

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.
Inhalation: Move effected persons to fresh air; if effects occur, consult a physician.
Skin Contact: Immediate, continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Destroy contaminated leather items.
Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.
Ingestion: Do not induce vomiting. Give one glass (ca. 2.5 dL) of water or milk if available and transport to

medical facility. Do not give anything by mouth to an unconscious person.

Note to Physician: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

4.2 Most Important symptoms/effects, acute and delayed:

Potential Acute Health Effects:

Eyes: Very hazardous in case of eye contact (irritant, corrosive). Inflammation of the eye is characterized by redness, watering and itching. Exposure of the eyes to amine vapors may produce a temporary and reversible hazing or blurring of vision. Symptoms disappear soon after exposure is terminated.

Respiratory: Vapors produced though handling of this material in it's uncured state may cause irritation of the eyes, nose, throat or other mucous membranes. Maintain adequate local exhaust or wear adequate personal protective equipment. Processing of cured materials may produce harmful and/or irritating dusts. Use of local exhaust and or dust/vapor respirators is recommended.

Skin: Hazardous in case of skin contact (corrosive). Skin contact may produce burns.

Potential Chronic Health Effects:

Respiratory: Repeated inhalation of vapors may cause lung damage. Provide appropriate ventilation to maintain exposures below occupational limits. Use of a filtering respirator rated for use with amines/ammonia is recommended where local ventilation is not adequate. See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION for exposure limits and recommended protective equipment. See section 11-TOXICOLOGICAL INFORMATION for further information.

Skin: Repeated skin contact may cause a persistent irritation or dermatitis. Repeated or prolonged exposure may aggravate existing dermatitis (skin contact). Overexposure to vapor, dust, or mist may aggravate existing respiratory conditions such as asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

4.3 Indication of immediate medical attention and special treatment needed, if necessary: N/A

5.0 FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical fire extinguishers.

5.2 Specific hazards arising from the chemical:

Flash point is 121ºC (250ºF). Combustion products may include and are not limited to: Nitrogen oxides, Carbon dioxide, Carbon monoxide.

5.3 Special protective actions for fire-fighters:

Wear positive-pressure self-contained breathing apparatus and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves.)

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment; see Section 8, EXPOSURE CONTROLS/PERSONAL PROTECTION.

6.2 Methods and materials for containment and clean up:

Large spills: Contain with dike. Pump into suitable and properly labeled containers.

Small spills: Dilute with water and recover or use non-combustible absorbent material/sand and shovel into appropriate containers. Neutralize residues with a dilute solution of acetic acid.

7.0 HANDLING AND STORAGE

7.1 Precautions for safe handling:

Keep container dry. Do not ingest. Do not breathe gas/fumes/dust/spray/dust. If ingested, seek medical advice immediately and show the container, label or this document. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities:

Store under nitrogen blanket for maximum shelf life. Product should not come in contact with copper or copper-bearing alloys. Storage Temperature and Shelf Life: Store between 10ºC and 27ºC for maximum shelf life.

8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

No data available.

8.2 Appropriate engineering controls:

Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for operations involving machining of dry or cured material.

8.3 Individual protection measures, such as personal protective equipment:

Respiratory Protection: For use of this material in it's uncured state, no respiratory protection should be needed with use of adequate local exhaust, however, if handling at elevated temperatures or without sufficient ventilation, use of an approved air-purifying or supplied air respirator is recommended. Use a CE approved air-purifying respirator with cartridge/filter for Amines or Ammonia

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. Safety shower should be located in immediate work area. 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.

Hand protection: Use chemical resistant gloves classified under standard EN 374: Protective gloves against chemicals and microorganisms.

Examples of preferred glove barrier materials include:

-Chlorinated polyethylene.

-Polyethylene.

-Ethyl vinyl alcohol laminate ("EVAL").

When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as the instructions/specifications provided by the glove supplier.

Eye/Face Protection: Eye wash fountain should be located in immediate work area. Use chemical goggles. A full-face shield and vapor respirator is recommended for operations involving spraying or other operations placing this material under pressurized conditions.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance (physical state, color, etc.): Mobile Liquid, Amber

9.2 Odor: Amine Odor

9.3 Odor threshold: N/A

9.4 pH: Basic

9.5 Melting point/freezing point: Not Determined

9.6 Initial boiling point and boiling range: Not Determined

9.7 Flash Point: 121ºC (250ºF)

9.8 Evaporation rate: N/A

9.9 Flammability (solid, gas): N/A

9.10 Upper/lower flammability or explosive limits: LFL-Not Determined; UFL-Not Determined

9.11 Vapor pressure: Not Determined

9.12 Vapor Density: N/A

9.13 Relative density(Specific Gravity): 0.95-1.00

9.14 Solubility(ies): Slightly Soluble in Water

9.15 Partition coefficient; n-octanol/water: N/A

9.16 Auto-ignition temperature: >300°C

9.17 Decomposition temperature: N/A

9.18 Viscosity: N/A

10.0 STABILITY AND REACTIVITY

10.1 Reactivity: N/A

10.2 Chemical stability: Stable under normal handling and storage conditions, see Section 7, Handling and Storage.

10.3 Possibility of hazardous reactions: N/A

10.4 Conditions to avoid: N/A

10.5 Incompatible materials: Acrylates. Aldehydes. Ketones. Halogenated organic compounds. Oxidising agents. Acids. Copper and its alloys (Brass, Bronze, etc.) Mixture with these materials will result in a temperature and/or pressure increase.

10.6 Hazardous decomposition products: N/A

11.0 TOXICOLOGICAL INFORMATION

11.1 Likely routes of exposure: N/A

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

Ingestion: Ingestion may cause gastrointestinal irritation or ulceration. Ingestion may cause burns of mouth and throat. Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.
Skin Contact: Prolonged or widespread skin contact may result in absorption of harmful amounts.
Irritation:
Skin: Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage. Skin contact has caused allergic skin reactions in certain sensitized individuals.
Eyes: May cause pain disproportionate to the level of irritation to eye tissues. May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Inhalation: May cause allergic respiratory response. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

11.3 Delayed and immediate effects and also chronic effects from short and long term exposure:

Carcinogen: This product contains no materials that are reported as known or suspect carcinogens in levels above 0.1%.
Mutagen: This product contains no materials that are reported as known or suspect mutagens in levels above 0.1%.
Reproductive Hazard: This product contains no materials that are known or suspected of causing a reproductive hazard in levels above 0.1%.

11.4 Numerical measures of toxicity:

This finished product has not been tested to determine individual toxicological/ecological limits. Individual components of this mixture have been independently tested by the raw material manufacturers and any known results have been presented below. The results for the individual components may not be representative of the toxicity of this finished product.

Ingredient Name	CAS No.	%	Test	Result	Route	Species
Polyoxypropylene Diamine	9046-10-0	70% - 80%	LD50	2880 mg/kg 2980 mg/kg	Oral Dermal	Rat Rabbit

12.0 ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

Ingredient Name	CAS No.	%	Test	Result	Species
Polyoxypropylene Diamine	9046-10-1	70% - 80%	LC50, 96 hr.	>220 mg/L	Fish

12.2 Persistence and degradability:

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented above. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits Great Caution should be taken to prevent release to the environment. See Section 13 for further information.

12.3 Bioaccumulative potential: N/A

12.4 Mobility in soil: N/A

12.5 Other adverse effects: N/A

13.0 DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations. The generation of waste should be avoided or minimized wherever possible. Untreated material is not suitable for disposal. Waste, even small quantities, should never be poured down drains, sewers or watercourses. Waste must be disposed of in accordance with federal, state and local environmental control regulations. This material, when properly mixed and cured with its resin component at the proper mix ratio, may be safely landfilled.
Contaminated packaging: Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Hazard warning labels should be removed from the container only after it has been properly emptied.

14.0 TRANSPORT INFORMATION

14.1 UN number: UN-2735

14.2 UN proper shipping name: Amines, Liquid, Corrosive, NOS (Triethylenetetramine)

14.3 Transport hazard class(es): 8

14.4 Packing group, if applicable: III

14.5 Environmental hazards: N/A

14.6 Transport in bulk: N/A

14.7 Special precautions for user: N/A

15.0 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations:

US TSCA: This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq. This product contains a chemical substance that is subject to export notification under Section 12(b) of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

Toxic Substances Control Act (TSCA) 12(b) Components: None Known

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es): Corrosive, Toxic by Skin Absorption, Dangerous for the Environment.

EPA SARA Title III section 302 (40CFR370) Hazard Class: Immediate Health Hazard, Delayed Health Hazard

EPA SARA Title III section 313 (40 CFR 372) Toxic Chemicals above "de minimus" levels: None

CALIFORNIA PROPOSITION 65: This product contains the following substance known to the State of California to cause cancer: None Known

CANADA REGULATIONS

WHMIS Classification: D2A - respiratory tract sensitizer, D2B – skin sensitizer, E - corrosive to metal or skin

WHMIS Symbol(s):

DSL: Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included on the Domestic Substances List.

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14).

16.0 OTHER INFORMATION

16.1 Date of Preparation: 08/29/2011

To the best of our knowledge, the information contained herein is accurate. Final determination of the suitability of any material is the sole responsibility of the users. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.