

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

PRODUCT NAME: EC-426-2 Hardener

CHEMICAL NAME: Polyamine Hardener

MANUFACTURER: CASS POLYMERS OF MICHIGAN, INC.

815 WEST SHEPHERD STREET
CHARLOTTE MI 48813 USA

INFORMATION PHONE: (248) 588-2270

EMERGENCY PHONE: (703) 527-3887(Call Collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Materials 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

Material Composition

Component	CAS.NO	EINECS/ELINCS No.	Percent
Polyamide Resin	68410-23-1	Not Available	100%

Hazardous materials must be listed if present in concentrations of 1.0% or higher. Materials posing a possible Chronic Health Risk must be listed at concentrations of 0.1% or higher. Materials listed in section 2 are not necessarily hazardous. See section 8-Exposure Controls/Personal Protection, and section 11-Toxicological Information for complete hazard/exposure limit information

3. HAZARDS IDENTIFICATION

****Emergency Overview****

Do not get in eyes, on skin or on clothing. Avoid prolonged contact with eyes, skin and clothing. Do not ingest. Do not breathe vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact of large amounts of spilled material and runoff with soil and surface waterways.

EC Classification(s): Xn-Harmful

Risk Phrase(s): R21/22: Harmful in contact with skin and if swallowed
(See Section 15-REGULATORY INFORMATION for complete risk phrases.)

ROUTES OF EXPOSURE

Eye Contact
Skin Contact
Ingestion
Inhalation
Skin Absorption

ACUTE HEALTH HAZARDS

Inhalation :

Harmful if inhaled and may cause delayed lung injury. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Eye contact :

Product vapor in low concentrations can cause lacrimation, conjunctivitis and corneal edema when absorbed into the tissue of the eye from the atmosphere. Corneal edema can cause the perception of "blue haze" or "fog" around lights, although this is a temporary effect and has no known residual effect. Causes eye irritation.

Skin contact :

Causes skin irritation.

Chronic Health Hazard :

This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Exposure Guidelines

Target Organs : Respiratory system. Skin. Eyes.

Symptoms :

Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat.

Sensitization

Repeated and/or prolonged exposure may cause allergic reaction/sensitization.

TARGET ORGANS

Eye

Skin

Respiratory system

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Asthma

Chronic respiratory disease (e.g. Bronchitis, Emphysema)

Eye disease

Skin disorders and Allergies

CARCINOGENS UNDER OSHA, ACGIH, NTP, IARC

This product contains no listed carcinogens in concentrations of 0.1 percent or greater.

See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION for exposure limits and recommended protective equipment.

See section 11-TOXICOLOGICAL INFORMATION for any further information.

4. FIRST AID MEASURES**EYE CONTACT**

Hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Seek medical advice.

SKIN CONTACT

Remove contaminated clothing and shoes. Remove product and immediately flush affected area with water for at least 15 minutes. Cover the affected area with a sterile dressing or clean sheeting and transport for medical care. Do not apply greases or ointments. Control shock, if present.

INHALATION

Move patient to fresh air. If breathing has stopped or is labored give assisted respiration (e.g. mouth-to-mouth). Supplemental oxygen may be indicated. Seek medical advice. Turn victim's head to the side to prevent aspiration of vomit

INGESTION

If person is conscious and can swallow, immediately give two glasses of water, but do not induce vomiting. This material is corrosive. If vomiting occurs, give fluids again. Have physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

Other Instructions

Swallowing of this corrosive material may result in severe ulceration, inflammation, and possible perforation of the upper alimentary tract with hemorrhage and fluid loss. Aspiration of this product during induced emesis can result in severe lung injury. If evacuation of stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact Poison Control Center for additional treatment information.

5. FIRE FIGHTING PRECAUTIONS

Flash Point: 339 °F (170.56 °C)

Upper Flammable Limit: Not Determined.

Lower Flammable Limit: Not Determined.

Suitable Extinguishing Media

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Hazardous thermal (de)composition products

Carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

Special fire-fighting procedures

Fire fighters should wear self-contained positive pressure breathing apparatus (SCBA) and full turnout gear.

Protection of fire fighters

Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES**CONTAINMENT TECHNIQUES (Removal of ignition sources, diking etc)**

Stop the leak, if possible. Ventilate the space involved. Shut off or remove all ignition sources. Construct a dike to prevent spreading (includes molten liquids until they freeze).

CLEAN-UP PROCEDURES

If recovery is not feasible, admix with dry soil, sand or non-reactive absorbent and place in an appropriate

chemical waste container. Transfer to containers by suction, preparatory for later disposal. Place in metal containers for recovery or disposal. Neutralize residue with dilute solution of Acetic Acid.. Flush area with water spray. Clean-up personnel must be equipped with self-contained breathing apparatus and butyl rubber protective clothing.

OTHER EMERGENCY ADVICE

Open enclosed spaces to outside atmosphere. Wear protective clothing, boots, gloves, and eye protection. At elevated temperatures a cartridge mask National Institute for Occupational Safety and Health (NIOSH) approved for ammonia may be appropriate.

7. HANDLING AND STORAGE

STORAGE

Keep away from acids and oxidizers. Keep in cool, dry, ventilated storage areas and in closed containers. Do not store in reactive metal containers.

HANDLING

Avoid contact with skin or eyes. Avoid breathing of vapors. Handle in well-ventilated workspace. When handling, do not eat, drink, or smoke.

OTHER PRECAUTIONS

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g. OSHA). Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Cancer-causing nitrosamines could be formed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Hazardous Component Control Parameters/Exposure Limits–

Component	CAS. No.	EINECS	Percent	Exposure Limits	Source
-No Data Available-					

EYE PROTECTION

Chemical Safety Glasses with Side-Shields. A full-face shield and vapor respirator is recommended for operations involving spraying or other operations placing this material under pressurized conditions.

HAND PROTECTION

Neoprene rubber gloves. Impermeable gloves. Cuffed butyl rubber gloves. Nitrile rubber gloves. Polyvinyl chloride gloves. Rubber Gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period. 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.

RESPIRATORY PROTECTION

An organic vapor respirator National Institute for Occupational Safety and Health (NIOSH) approved for organic vapors is recommended where local ventilation is not adequate. At elevated temperatures, a cartridge mask National Institute for Occupational Safety and Health (NIOSH) approved for ammonia may be appropriate.

PROTECTIVE CLOTHING

Chemical resistant apron, coveralls and other impervious clothing. A full-face shield and vapor respirator is recommended for operations involving spraying or other broadcasting

ENGINEERING CONTROLS

No specific controls needed.

WORK AND HYGIENIC PRACTICES

Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	Viscous Liquid
Color :	Amber
Odor :	Amine Odor
Specific gravity :	0.94 – 0.97
Vapor pressure:	Not Determined
Boiling point/range:	Not Determined
Freezing point/range :	Not Determined
Water solubility :	Liquid Components are Soluble in Water (10%)
pH :	Basic
Flash point :	Not Determined

Auto-ignition temp. :	Not Determined
Flammability-LFL :	Not Determined
Flammability-UFL :	Not Determined
% volatile:	0 g/L (0%)

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal handling and storage conditions, see Section 7, Handling and Storage.

Materials to Avoid

Mineral acids, Organic acids, Oxidizing Agents, Reactive metals, Sodium or Calcium Hypochlorite. 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. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Materials reactive with hydroxyl compounds. Nitrites, nitrosating agents. A reaction accompanied by large heat release occurs when the product is mixed with acids. Heat generated may be sufficient to cause vigorous boiling creating a hazard due to splashing or splattering of hot material.

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials).

Nitrogen oxide can react with water vapors to form corrosive nitric acid (TLV=2 ppm). Carbon Monoxide in a fire. Carbon Dioxide in a fire. Ammonia when heated. Nitrogen Oxides in a fire. Irritating and toxic fumes at elevated Temperatures. Nitric acid in a fire. Nitrosamines. The oxides of nitrogen gases (except nitrous oxide) emitted on decomposition are highly toxic.

HAZARDOUS POLYMERIZATION

Will not occur

CONDITIONS TO AVOID (if polymerization may occur)

Not applicable

11. TOXICOLOGICAL INFORMATION

Acute 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
-No Further Information Available-						

-No Further Information Available-

Ingestion

This material should be considered toxic if ingested.

Skin Contact

This material should be considered moderately toxic if absorbed through the skin.

Irritation

Skin

Causes severe irritation with pain, severe excess redness and swelling with chemical burns, blister formation, and possible tissue destruction. In addition, skin contact may result in other adverse health effects.

Eyes

This material is very hazardous in case of eye contact. This corrosive material will cause severe irritation and burns with corneal injury which may result in permanent impairment of vision, even blindness.

Inhalation

Vapors and mist, especially as generated from heating the material or as from exposure in poorly ventilated or confined spaces, are irritating and cause nasal discharge, coughing, and discomfort in nose and throat. Prolonged or repeated overexposure may result in lung damage.

Chronic Exposure

Carcinogen

This product contains no known or suspected human carcinogens in concentrations above 0.1%

Mutagen

This Product contains no known or suspected human mutagens in concentrations above 0.1%

Reproductive Hazard

This Product contains no known materials or materials suspected of causing human reproductive hazards.

12. ECOLOGICAL INFORMATION**Persistence/degradability:**

This material contains substances that show little to no evidence of biodegradability. Great care should be taken to prevent it's release into the environment.

Ecotoxicity Data:

Chemical Name	CAS No.	%	Test	Concentration	Result	Species
-No Information Available-						

-No Information Available-

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.

13. DISPOSAL CONSIDERATIONS**Disposal**

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. TRANSPORT INFORMATION**Land/Air/Sea/Rail**

Proper Shipping Name: Liquid Plastic, NOI
 UN Number: Not Regulated
 Hazard Class: Not Regulated
 Packing Group: Not Regulated

15. REGULATORY INFORMATION**US FEDERAL REGULATIONS****TOXIC SUBSTANCES CONTROL ACT (TSCA)-**

All components are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

TOXIC SUBSTANCE CONTROL ACT (TSCA) 12(b) COMPONENT(S)

None

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)

Irritant. Sensitizer.

EPA SARA Title III Section 312 (40CFR370) hazard class

Immediate Health Hazard. Delayed Health Hazard.

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are

None

STATE REGULATIONS

PROPOSITION 65 SUBSTANCES (component(s) known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986")

None

NEW JERSEY TRADE SECRET REGISTRY NUMBER(S)

None

CANADA**WHMIS Classifications**

Toxic Material Causing Other Toxic Effects



This product, or it's components, are listed on or are exempt from the Canadian Domestic Substance List

EUROPEAN ECONOMIC COMMUNITY (EEC)**EINECS/ELINCS MASTER INVENTORY**

Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.

EEC SYMBOL**Xn**

Hazard Symbol: Xn-Harmful

Risk Phrases: R21/22: Harmful in contact with skin and if swallowed

Safety Phrases: S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28	After contact with skin, wash immediately with plenty of water.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. OTHER INFORMATION

No Other Information

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.
