

1. Product Identification

Product name	SB-112 Hardener, Part B
SDS Number	0400B00
Product type	Polyamine mixture
Recommended use of the chemical and restrictions on use	Directed at, but not limited to, the laminating and coating of fiber reinforced composites and wood.
Restrictions	None known.
Manufacturer/Supplier information	
Company name	SYSTEM THREE RESINS, INC.
Address	3500 W. Valley Hwy, Suite Suite 105 Auburn, WA 98001-2436 United States
Telephone	1-253-333-8118
Website	www.systemthree.com
Email	support@systemthree.com
Emergency Contact	CHEMTREC (U.S. and CANADA) 1-800-424-9300 CHEMTREC (Outside the U.S.) 1-703-527-0585

2. Hazard(s) Identification

Classification of substance or mixture/Signal Word	DANGER Acute Toxicity (oral, dermal) – Category 4 Skin Corrosion/Irritation – Category 1 Serious Eye Damage/Eye Irritation – Category 1 Skin Sensitization – Category 1 Toxic to Reproduction [Fertility, Unborn child]– Category 1
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GHS Label Elements

Hazard Pictograms



Hazard Statements/Classification of substance or mixture	H302 Harmful if swallowed. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H360 May damage fertility or the unborn child.
Precautionary statements	
<u>Precautionary Statements</u>	P201 Obtain special instructions before use.
Prevention	P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling.

	P270 Do not eat, drink or smoke when using the product.
	P272 Contaminated work clothing should not be allowed out of the workplace.
	P273 Avoid release to the environment.
Response	P280 Wear protective gloves. Wear eye or face protection.
	P310 Immediately call a POISON CENTER or doctor/physician.
	P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P302+352+363 IF ON SKIN: Wash with soap and water. Take off contaminated clothing and wash before reuse.
	P304+340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Storage	P333+313 If skin irritation or rash occurs: Get medical advice/attention.
Disposal	P405 Store locked up.
	P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified (HNOC)	None available.

3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Cycloaliphatic Amine Adduct	Trade Secret	50 – 60%
Aliphatic Amine Adduct	Trade Secret	30 – 40%
Polyoxypropylenediamine	9046-10-0	10 – 15%

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

4. First-Aid Measures

Skin contact

Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Flush immediately with copious amounts of water. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing.

Eye contact

Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Ingestion

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting without medical advice. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain open airway. Loosed tight clothing such as a collar, tie, belt, or waistband.

Inhalation Move to fresh air.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

Specific treatments No specific treatment.

5. Fire-Fighting Measures

Suitable extinguishing media	Alcohol-resistant foam. Carbon dioxide (CO ₂). Dry chemical Water Fog
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from firefighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes.
Hazardous decomposition products	Decomposition products may include the following materials: Carbon dioxide Carbon monoxide Nitrogen oxides
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Further information	Do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. Accidental Release Measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Wear proper protective clothing, gloves and eye/face protection.
Emergency procedures	If material is spilled, avoid contact with material. Persons not wearing appropriate protective equipment should leave the area of the spill until cleanup is complete.
Methods and materials for containment/cleanup	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

7. Handling and Storage

Precautions for safe handling

Put on appropriate personal protective equipment. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid contact with skin and eyes. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. When using, do not eat, drink or smoke. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Precautions/Recommendations for safe/proper storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

None established.

Appropriate engineering controls

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Do not allow spill to enter sewers or waterways.

Individual protection measures/Personal protective equipment

Eye/face protection

Splash-proof goggles or safety spectacles with side shields are recommended. Always wear eye protection when sanding cured epoxy resins to avoid dust in eyes.

Hand protection

Always wear impervious gloves: butyl rubber, nitrile rubber, Neoprene, PVC disposable gloves,

Skin protection

Wear clean, body-covering clothing to avoid skin contact.

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Special instructions for protection and hygiene

Wear gloves at all times when handling product, avoid direct contact with skin. When finished using product, dispose of gloves properly and wash hands with warm, soapy water.

9. Physical and Chemical Properties

Chemical family	Amine Curing Agent
Appearance	Clear liquid
Physical State	
Form	Pourable liquid
Color	Very light yellow
Odor	Ammoniacal
Density (Specific Gravity)	8.65 lb/gal (1.04)
Viscosity	2200 CPS @ 77 °F (25 °C)
pH	Alkaline
Melting point/freezing point	N/A
Initial boiling point and boiling range	N/A
Flash point	N/A
Evaporation rate	Slower than ether
Flammability (solid, gas)	N/A
Upper/lower flammability limit (by volume)	N/A
Material VOC	N/A
Vapor density	Heavier than air
Relative density	N/A
Solubility in water	Very slight in water
Partition coefficient: n-octanol/water	N/A
Auto-ignition temperature	N/A
Decomposition temperature	N/A

10. Stability and Reactivity

Reactivity	Stable under normal conditions.
Chemical Stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Epoxy resins and epoxy resin hardeners react with each other producing heat. They should not be mixed with each other under uncontrolled conditions or in a large mass as the ensuing exotherm may result in heat and smoke.
Incompatible materials	Strong oxidizing agents and mineral acids.
Hazardous decomposition products	Oxides of carbon, nitrogen.
Other hazards	None known.

11. Toxicological Information

<u>Acute Health Hazard (components)</u>	No comprehensive data (ingestion, inhalation, dermal) on mixture (product).
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Component	Result	Species	Dose	Exposure
Polyoxypropylenediamine	LD50 Oral	Rat	2,885.3 mg/kg	-
	LC50 Inhalation	Rat	>0.74 mg/l	8 h
	LD50 Dermal	Rabbit	2,979.7 mg/kg	-

Irritation/Corrosion (components)

Classifies as Skin Corrosion Category 1 per positive Corrositex Dermal Testing.
Classifies as Serious Eye Damage Category 1 per GHS calculations.

Component	Result	Species	Test	Exposure
Polyoxypropylenediamine	Skin-Corrosive	Rabbit	-	1-4 h
	Eye-Corrosive	Rabbit	OECD Test Guideline 405	-

Sensitization

No information on product itself.

Mutagenicity

No information on product itself.

Carcinogenicity

No information on product itself.

Reproductive Toxicity

No information on product itself.

Teratogenicity

No information on product itself.

Specific target organ toxicity (single exposure)

No information on product itself.

Specific target organ toxicity (repeated exposure)

No information on product itself.

Aspiration hazard

No information on product itself.

Potential acute health effects

Eye Contact

Causes serious eye damage.

Inhalation

No data available.

Skin Contact

Causes severe burns. May cause an allergic skin reaction.

Ingestion

Harmful if swallowed. May cause burns to mouth, throat, and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye Contact

Adverse symptoms may include the following:

Pain
Watering
Redness

Inhalation

Adverse symptoms may include the following:

Wheezing and breathing difficulties
Asthma

Skin Contact

Adverse symptoms may include the following:

Pain or irritation
Redness
Blistering may occur

Ingestion

Adverse symptoms may include the following:

Stomach pains

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

No information on product itself.

Potential chronic health effects

General

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates (ATEmix)

Route	ATE value
Oral	1336.8 mg/kg
Dermal	1634.4 mg/kg
Inhalation (vapors)	-

12. Ecological Information

Ecotoxicity

No comprehensive data available on product itself.

Component	Test Endpoint	Species	Results	Exposure
Polyoxypropylenediamine	Acute EC50: OECD 203 Fish, Acute Toxicity Test	Fish	>15 mg/l	96 h Semi-static
	Acute EC50: OECD 203 Fish, Acute Toxicity Test	Fish	772.14 mg/l	96 h Static
	Chronic NOEC: OECD 201 Alga, Growth Inhibition Test	Algae	0.32 mg/l	72 h Static

Persistence and degradability

No information on product itself.

Component	Test	Period	Result
Polyoxypropylenediamine	OECD 301B Ready Biodegradability – CO2 Evolution Test	28 days	0%

Bioaccumulative Potential

No information on product itself.

Component	LogPow	BCF	Potential
Polyoxypropylenediamine	1.34	-	low

Mobility in Soil

Soil/water partition coefficient (KOC) No information on product itself.

Other adverse effects No known significant effects or critical hazards.

13. Disposal Considerations

Waste from residues/ unused products

Product should not be allowed to enter drains, water courses or the soil; dispose of this material and its containers in a safe way. Contact supplier if guidance is required.

Contaminated packaging

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International Transport Regulations

Regulatory information	UN/NA number	Proper Shipping Name	Classes/*PG	Additional Information
DOT	UN2735	Amines, liquid, corrosive, n.o.s. (polyoxypropylenediamine)	Class 8 III	
TDG	UN2735	Amines, liquid, corrosive, n.o.s. (polyoxypropylenediamine)	Class 8 III	
IMO/IMDG	UN2735	Amines, liquid, corrosive, n.o.s. (polyoxypropylenediamine)	Class 8 III	
IATA	UN2735	Amines, liquid, corrosive, n.o.s. (polyoxypropylenediamine)	Class 8 III	

*PG: Packing group

Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. Regulatory Information

UNITED STATES

U.S. Federal Regulations

United States – TSCA 12(b) – Chemical export notification: None Required.
United States – TSCA 5(a)2 – Final significant new use rules: Not Listed.
United States – TSCA 5(a)2 – Proposed significant new use rules: Not Listed.
United States – TSCA 5(e) – Substance consent order: Not listed.

Clean Air Act – Ozone Depleting Substances (ODS)

This product does not contain nor is manufactured with ozone depleting substances.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) Pennsylvania – RTK

None known.

None known.

California Prop. 65

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

EPA SARA 302 Extremely Hazardous Substances

None known

EPA SARA 302/304/311/312 Hazardous Chemicals

Acute health hazard
Chronic health hazard

SARA 313

None.

Form R – Reporting requirements

CERCLA Hazardous substances

None required.

United States inventory (TSCA 8b)

All components are listed or exempted.

CANADA

WHMIS (Canada)

Class D-2B: Material causing other toxic effects (Toxic).
Class E: Corrosive material.

Canadian NPRI

None required.

CEPA Toxic substances

None required.

INTERNATIONAL REGULATIONS

International Lists

Australia inventory (AICS): All components are listed or exempted.

Canada inventory: All components are listed or exempted.

Korea inventory: All components are listed or exempted.

Japan inventory: All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

New Zealand inventory (NZIoC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

Taiwan inventory (CSNN): All components are listed or exempted.

16. Other Information, Including Date of Preparation or Last Revision

HMIS Rating

Health	3
Flammability	1
Physical Hazard	0

Date of Preparation	November 12, 2018
Date of Last Revision	October 11, 2017
Revision #	3.0
More Information	1-253-333-8118
Prepared by	N. Kim, System Three Resins Inc.

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