

1. Product Identification

Product name	Submarine Hardener, Part B	
SDS Number	1250B00	
Product type	Amine/Pigment Mixture	
Recommended use of the chemical and restrictions on use	Paste hardener component.	
Restrictions	None known.	
Manufacturer/Supplier information		
Company name	SYSTEM THREE RESINS, INC.	
Address	3500 W. Valley Hwy N 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 SKIN CORROSION/IRRITATION – Category 2 SERIOUS EYE DAMAGE/IRRITATION – Category 1 SKIN SENSITIZATION – Category 1 GERM CELL MUTAGENICITY – Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2 ACUTE AQUATIC TOXICITY – Category 3
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GHS Label Elements
Hazard Pictograms

Hazard Statements/Classification of substance or mixture	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H341 Suspected of causing genetic defects. H373 May cause damage to organs through prolonged or repeated exposure. H402 Harmful to aquatic life.
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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 vapor.

	P261 Avoid breathing vapor.
	P264 Wash hands thoroughly after handling.
	P270 Do not eat, drink, or smoke when using this product.
	P272 Contaminated work clothing should not be allowed out of the workplace.
	P273 Avoid release to the environment.
	P280 Wear protective gloves. Wear eye or face protection.
Response	P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P302 + P352 IF ON SKIN (or hair): Wash with plenty water.
	P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P308 + P313 IF exposed or concerned: Get medical advice/attention.
	P314 Get medical advice/attention if you feel unwell.
	P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
	P362 + P354 Take off contaminated clothing and wash it before reuse.
Storage	P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
	P405 Store locked up.
Disposal	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 (%)
Cashew (Anacardium occidentale) Nutshell Extract, decarboxylated, Distilled	8007-24-7	5 – 10%
Tris-2,4,6-(dimethylaminomethyl)phenol	90-72-2	1 – 5%
m-Phenylenebis(methylamine)	1477-55-0	1 – 5%
N-(Tallow alkyl)-1,3-propanediamine oleate	61791-53-5	1 – 5%

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

Get medical attention immediately. Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists or if open sores or blisters develop. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Safety shower should be located in immediate workarea.

Eye contact

Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. Suitable emergency eye wash facility should be available in work area.

Ingestion

Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical

attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.

Inhalation

Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

Notes to physician

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled or if extended exposure to eye and skin tissues have occurred.

Specific treatments

No specific treatment.

5. Fire-Fighting Measures

Suitable extinguishing media

Alcohol resistant foam, carbon dioxide, dry chemical, dry sand, limestone powder.

Unsuitable extinguishing media

Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from the firefighting to enter drains or water courses.

Specific hazards arising from the chemical

May generate ammonia gas. May generate amines and toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from the firefighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes. In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous decomposition products

Carbon oxides, 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 protection equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in a positive pressure mode.

Further information

None known.

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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Emergency procedures

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Methods and materials for containment/cleanup

Small Spill: Stop leak if without risk. Move containers from spill area. Absorb with an inert dry absorbent material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. Wash the spill area clean with water and detergent, observing environmental requirements. Large Spill: 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 inert dry absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Wash the spill area clean with water and detergent, observing environmental requirements. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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 (see Section 8). Avoid exposure; obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated.

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 (see Section 10) and food and drink. 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. Use local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Provide readily accessible eye wash stations and safety showers.

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.

Individual protection measures/Personal protective equipment

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: chemical splash goggles.

Hand protection

Always wear impervious gloves, neoprene, vinyl or rubber.

Skin protection

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

Respiratory protection

Use a NIOSH-approved respiratory device when sanding cured epoxy to prevent dust in lungs.

Special instructions for protection and hygiene

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working

period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Discard contaminated leather items. Ensure that eyewash stations and safety showers are close to the workstation location.

9. Physical and Chemical Properties

Chemical family	Phenalkamine
Appearance	Black paste
Physical State	
Form	Paste
Color	Black
Odor	Ammonia-like odor
Density (Specific Gravity)	12.64 lb/gal (1.51)
Viscosity	110,000 – 120,000 CPS @25°C (77°F)
pH	Not available
Melting point/freezing point	Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not available
Evaporation rate	Slower than ether
Flammability (solid, gas)	Not available
Upper/lower flammability limit (by volume)	Not available
Material VOC	None
Vapor density	Heavier than air
Relative density	Not available
Solubility in water	Negligible
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available

10. Stability and Reactivity

Reactivity	No specific test data related to reactivity is available for this product or its ingredients.
Chemical Stability	Stable under normal conditions.
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 exothermic reaction may produce heat, smoke and hazardous decomposition products.
Incompatible materials	Strong oxidizing agents, mineral acids, organic acids, sodium hypochlorite, reactive metals (e.g. sodium, calcium, zinc, etc.).

Hazardous decomposition products

Organic acid vapors, nitric acid, ammonia, nitrogen and carbon oxides, nitrosamine and aldehydes. Nitrogen oxide can react with water vapors to form corrosive nitric acid.

Other hazards

None known.

11. Toxicological Information

Acute Health Hazard (components)

No comprehensive data (ingestion, inhalation, dermal) on mixture (product).

Component	Result	Species	Dose	Exposure
Cashew (Anacardium occidentale) Nutshell Extract, decarboxylated, Distilled	LD50 Dermal	Rat	2,000 mg/kg	-
	LD50 Oral	Rat	>2,000 mg/kg	-
Tris-2,4,6-(dimethylaminomethyl)phenol	LD50 Oral	Rat	2,169 mg/kg	-
m-Phenylenebis(methylamine)	LD50 Dermal	Rabbit	2,000 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
N-(Tallow alkyl)-1,3-propanediamine oleate	LD50 Oral	Rat	>5,000 mg/kg	-

Irritation/Corrosion (components)

Classifies as non-corrosive to skin per negative Corrositex Dermal Testing.
Classifies as Serious Eye Damage Category 1 per GHS calculations of additivity.

Component	Result	Species	Test	Exposure
Cashew (Anacardium occidentale) Nutshell Extract, decarboxylated, Distilled	Eyes – Corrosive	-	-	-
	Skin – Severe irritant	-	-	-
Tris-2,4,6-(dimethylaminomethyl)phenol	Skin – Corrosive	Rabbit	In vitro test	-
	Eyes – Severe Irritant	Rabbit	-	-

Sensitization

No data is available on the product itself.

Component	Result	Species	Test	Exposure
Cashew (Anacardium occidentale) Nutshell Extract, decarboxylated, Distilled	Sensitizing	-	Skin	-
Tris-2,4,6-(dimethylaminomethyl)phenol	Sensitizing	Guinea pig	Skin	-

Mutagenicity

No data is available on the product itself.

Carcinogenicity

No data is available on the product itself.

Reproductive Toxicity

No data is available on the product itself.

Teratogenicity

No data is available on the product itself.

Specific target organ toxicity (single exposure)

No data is available on the product itself.

Specific target organ toxicity (repeated exposure)

No data is available on the product itself.

Aspiration hazard

No data is available on the product itself.

Potential acute health effects**Eye Contact**

Causes serious eye damage.

Inhalation

No specific data.

Skin Contact Causes severe skin burns. May cause an allergic skin reaction.
Ingestion Irritating 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:
 No specific data

Skin Contact Adverse symptoms may include the following:
 Pain or irritation
 Redness

Ingestion Adverse symptoms may include the following:
 No specific data

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

Potential chronic health effects

General Causes damage to organs through prolonged or repeated exposure: 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	8404.2 mg/kg
Dermal	11,985.0 mg/kg
Inhalation (vapors)	819.3 mg/l

12. Ecological Information

Ecotoxicity

No data is available on the product itself.

Component	Test	Species	Exposure	Result
Cashew (Anacardium occidentale) Nutshell Extract, decarboxylated, Distilled	Acute EC50	Algae	-	1300 mg/l
	Acute LC50	Fish	-	1000 mg/l
Tris-2,4,6-(dimethylaminomethyl)phenol	Acute LC50	Rainbow trout	24 h	222 mg/l
m-Phenylenebis(methylamine)	LC50 OECD 203	Fish	96 h	87.6 mg/l
	EC50 OECD 202	Daphnia magna	48 h	15.2 mg/l
	NOEC OECD 211	Daphnia magna	21 d	4.7 mg/l

N-(Tallow alkyl)-1,3-propanediamine oleate	Acute LC50	Fish	96 h	>0.1-1 mg/l
	Acute EC50	Daphnia magna	48 h	>0.1-1 mg/l
	Acute EC50	Algae	72 h	>0.01-0.1 mg/l
	Chronic EC10 OECD 211	Daphnia	-	>1 mg/l

Persistence and degradability No data is available on the product itself.

Component	Test	Period	Result
m-Phenylenebis(methylamine)	OECD 301B	28 d	49%

Bioaccumulative Potential No data is available on the product itself.

Component	LogPow	BCF	Potential
m-Phenylenebis(methylamine)	-	3.16 l/kg (calculated)	-

Mobility in Soil

Soil/water partition coefficient (KOC) No data is available on the product itself.

Other adverse effects No known significant effects or critical hazards.

13. Disposal Considerations

Waste from residues/ unused products The generation of waste should be avoided or minimized wherever possible. 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		Non-regulated		
TDG		Non-regulated		
IMO/IMDG	UN2735	Amines, liquid, corrosive, n.o.s., (Tris-2,4,6-(dimethylaminomethyl)phenol)	Class 8 III	
IATA	UN2735	Amines, liquid, corrosive, n.o.s., (Tris-2,4,6-(dimethylaminomethyl)phenol)	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: Not Listed.
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 it manufactured with ozone depleting substances.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)

Product Name	Concentration %
Phenol	0 – 1

Pennsylvania – RTK

Phenol

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

EPA SARA 302 Extremely Hazardous Substances

None.

EPA SARA 302/304/311/312 Hazardous Chemicals

Acute Health Hazard

SARA 313

Product Name	Concentration %
Phenol	0 - 1

Form R – Reporting requirements

CERCLA Hazardous substances

Component	%	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product Reportable Quantity (Lbs)
Phenol	1	Listed	1000	10000

United States inventory (TSCA 8b)

All components are listed or exempted.

CANADA

WHMIS (Canada)

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

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

April 11, 2019

Date of Last Revision

September 18, 2018

Revision #

3.0

More Information

1-253-333-8118

Prepared by

System Three Resins Inc.

The information contained herein is based on the data available to us and is believed to be correct. However, System Three Resins, Inc. makes no warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use thereof. System Three assumes no responsibility for injury from the use of the product described herein.