

**1. Product Identification**

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<b>Product name</b>	Submarine Hardener, Part B	
<b>SDS Number</b>	1250B00	
<b>Product type</b>	Amine/Pigment Mixture	
<b>Recommended use of the chemical and restrictions on use</b>	Paste hardener component.	
<b>Restrictions</b>	None known.	
<b>Manufacturer/Supplier information</b>		
<b>Company name</b>	SYSTEM THREE RESINS, INC.	
<b>Address</b>	8517 Commerce Place Dr NE Lacey, WA 98516 United States	
<b>Telephone</b>	1-253-333-8118	
<b>Website</b>	www.systemthree.com	
<b>Email</b>	support@systemthree.com	
<b>Emergency Contact</b>	CHEMTEL (U.S. and CANADA)	1-800-704-9215
	CHEMTEL (Outside the U.S.) – Call Collect accepted	+1-360-256-7365

**2. Hazard(s) Identification**

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<b>Classification of substance or mixture/Signal Word</b>	DANGER SKIN CORROSION/IRRITATION – Category 2 SERIOUS EYE DAMAGAE/IRRITATION – Category 1 SKIN SENSITIZATION – Category 1 GERM CELL MUTAGENICTY – Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2 ACUTE AQUATIC TOXICITY – Category 3
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**GHS Label Elements**  
**Hazard Pictograms**

<b>Hazard Statements/Classification of substance or mixture</b>	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**

<b><u>Precautionary Statements</u></b>	P201 Obtain special instructions before use.
<b>Prevention</b>	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.
<b>Response</b>	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.
<b>Storage</b>	P362 + P354 Take off contaminated clothing and wash it before reuse.
	P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
	P405 Store locked up.
<b>Disposal</b>	P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazards not otherwise classified (HNOC)</b>	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

<b>Skin contact</b>	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 work area.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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

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**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

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**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

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**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

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**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

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

## 10. Stability and Reactivity

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<b>Reactivity</b>	No specific test data related to reactivity is available for this product or its ingredients.
<b>Chemical Stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	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.
<b>Incompatible materials</b>	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 Form R – Reporting requirements**

Product Name	Concentration %
Phenol	0 - 1

**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**

January 14, 2020

**Date of Last Revision**

September 27, 2019

**Revision #**

5.0

**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.