Safety Data Sheets (SDS)
Updated: January 1, 2023

This file contains Safety Data Sheets for SilverTip Submarine . This is a two-component system. It is imperative that you know whether you need information on the Resin or the Hardener.

If this is a medical emergency, call 911 or your local poison control center. Seek medical attention.

For technical assistance, call System Three Technical Support at 253-333-8118 option 2.

These SDS are provided pursuant to 29 CFR 1910.1200(g).

SAFETY DATA SHEET

1. Product Identification

Product name	Submarine Resin, Part A
SDS Number	1250A00
Product type	Epoxy polymer mixture
Recommended use of the chemical and restrictions on use	Directed at, but not limited to, the repair of similar and dissimilar materials.
Restrictions	None known.
Manufacturer/Supplier information	
Company name	SYSTEM THREE RESINS, INC.
Address	8517 Commerce Place Dr NE Lacey, WA 98516 United States
Telephone	1-253-333-8118
Website	www.systemthree.com
Email	support@systemthree.com
Emergency Contact	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

Classification of substance or mixture/Signal Word

WARNING
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGAE/IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] – Category 3
ACUTE AQUATIC TOXICITY – Category 3
CHRONIC AQUATIC TOXICITY – Category 3

GHS Label Elements
Hazard Pictograms

Hazard Statements/Classification of substance or mixture

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

Precautionary Statements
Prevention

P261	Avoid breathing dust/fume/vapors/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.

	P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response	P304 + 340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P302+352+363 IF ON SKIN: Wash with soap and water. Take off contaminated clothing and wash before reuse. P305+351+338 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 attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P362 + P364 Take off contaminated clothing and wash it before reuse.
Storage	P401 Store at room temperature in a well-ventilated area.
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 (%)
Diglycidyl Ether of Bisphenol A	25068-38-6	45 – 50%
Bisphenol A epoxy - CTBN rubber adduct	68610-41-3	5 – 10%
Diglycidyl Ether of Bisphenol F	28064-14-4	5 – 10%

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	Remove contaminated clothing and shoes and wipe excess off skin. Flush skin with water. Follow by washing in soap and water. If irritation occurs, seek medical attention. Do not reuse clothing until cleaned. Contaminated leather articles (shoes) cannot be decontaminated and should be destroyed.
Eye contact	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. Get medical attention.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. 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. 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.
Inhalation	Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

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.

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	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous decomposition products	Decomposition products may include the following materials: Carbon dioxide Carbon monoxide
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	Wear proper personal protective equipment (PPE). Avoid direct contact with material. Proper PPE includes: disposable gloves, eye protection and skin protection.
Emergency procedures	If materials 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

7. Handling and Storage

Precautions for safe handling	Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Use personal protective equipment. When using, do not eat, drink or smoke.

Precautions/Recommendations for safe/proper storage	Store epoxy products in temperature stable environment, out of the reach of pets or children. Securely fasten container lids and tops, and prevent products from sitting and below freezing temperatures.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits	None established.
Appropriate engineering controls	None established.
Environmental exposure 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.
Individual protection measures/Personal protective equipment	Use appropriate containment to avoid environmental contamination. Do not allow spill to enter sewers or waterways.
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	Epoxy Resin
Appearance	White paste
Physical State	Epoxy polymer mixture
Form	Paste
Color	White
Odor	Mild
Density (Specific Gravity)	12.18 lb/gal (1.46)
Viscosity	140,000 – 150,000 CPS
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 applicable

Upper/lower flammability limit (by volume)	Not applicable
Upper flammability limit (by volume)	Not applicable
Lower flammability limit (by volume)	Not applicable
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 available for this product.
Chemical Stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization 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 large mass as the ensuing exotherm may result in heat and smoke, resulting in hazardous decomposition products.
Incompatible materials	Strong oxidizing and reducing agents. Lewis and mineral acids.
Hazardous decomposition products	Oxides of carbon, aldehydes, and acids.
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
Diglycidyl Ether of Bisphenol A	LD50 Oral	Rat	11,400 mg/kg	-
	LD50 Dermal	Rat	2,000 mg/kg	-
Bisphenol A epoxy – CTBN rubber adduct	LD50 Oral	Rat	>2,000 mg/kg	-
	LD Dermal	Rabbit	>2,000 mg/kg	-
Diglycidyl Ether of Bisphenol F	LD50 Oral	Rat	>2,000 mg/kg	-
	LD50 Dermal	Rat	>2,000 mg/kg	-

Irritation/Corrosion (components) No information on the product itself.

Component	Result	Species	Test	Exposure
Diglycidyl Ether of Bisphenol A	Moderate to severe irritation	Rabbit	Skin	4 h
	Mild irritation	Rabbit	Eye	24 h
Diglycidyl Ether of Bisphenol F	Mild irritant	Rabbit	Skin	-
	Mild irritant	Rabbit	Eye	-

Sensitization No information on the product itself.

Component	Result	Species	Test	Exposure
Diglycidyl Ether of Bisphenol F	Sensitizing	Guinea Pig	Skin	-

Mutagenicity No information on the product itself.

Carcinogenicity No information on the product itself.

Reproductive Toxicity No information on the product itself.

Teratogenicity No information on the product itself.

Specific target organ toxicity (single exposure) No information on the product itself.

Component	Category	Route of exposure	Target organs
Diglycidyl Ether of Bisphenol A	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure) No information on the product itself.

Aspiration hazard No information on the product itself.

Potential acute health effects

Eye Contact Causes serious eye irritation.

Inhalation May cause respiratory irritation.

Skin Contact Causes skin irritation. 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:
Respiratory tract irritation
Coughing

Skin Contact Adverse symptoms may include the following:
Irritation
Redness

Ingestion No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure Not available.

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) No specific data.

12. Ecological Information

Ecotoxicity No information on the product itself.

Component	Result	Species	Exposure
Diglycidyl Ether of Bisphenol A	Acute LC50 1.3 mg/l	Fish	96 h
	Acute LC50 2.1 mg/l	Daphnia	48 h
Bisphenol A epoxy – CTBN rubber adduct	Acute LC50 1-100 mg/l	Fish	96 h
	Acute EC50 1-100 mg/l	Invertebrates	48 h
Diglycidyl Ether of Bisphenol F	Acute LC50 1.5 mg/l	Fish	96 h
	Acute LC50 1.7 mg/l	Daphnia	48 h
	Chronic NOEC 0.3 mg/l	Daphnia	21 d

Persistence and degradability No information on the product itself.

Component	Test	Period	Result
Diglycidyl Ether of Bisphenol A	OECD 302B	28 d	12%
Diglycidyl Ether of Bisphenol F	OECD 301F Derived	28 d	5%

Bioaccumulative Potential No information on the product itself.

Component	LogPow	BCF	Potential
Diglycidyl Ether of Bisphenol A	2.64 – 3.78	3 – 31	Low
Diglycidyl Ether of Bisphenol F	3.242	31	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 The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. 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	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL-A EPICHLOROHYDRIN RESIN)	Class 9 III	
IATA	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL-A EPICHLOROHYDRIN RESIN)	Class 9 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 it manufactured with ozone depleting substances.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)
None.

Pennsylvania – RTK
None.

California Prop. 65
WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer. WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient Name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Oxirane, 2-(phenoxymethyl)-	Yes	No	5 µg/day	No
Oxirane, 2-(chloromethyl)-	Yes	Yes	9 µg/day	No

EPA SARA 302/304/311/312 Hazardous Chemicals
Acute Health Hazard

SARA 313
None Required

Form R – Reporting requirements

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	**2**
Flammability	**1**
Physical Hazard	**0**

Date of Preparation	January 14, 2020
Date of Last Revision	September 27, 2019
Revision #	4.0
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.

SAFETY DATA SHEET

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	8517 Commerce Place Dr NE Lacey, WA 98516 United States
Telephone	1-253-333-8118
Website	www.systemthree.com
Email	support@systemthree.com
Emergency Contact	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

Classification of substance or mixture/Signal Word

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

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.

Precautionary statements

Precautionary Statements
Prevention

P201 Obtain special instructions before use.
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 work area.
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
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.

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