

SYSTEMTHREE

Safety Data Sheets (SDS)

Updated: January 1, 2023

This file contains Safety Data Sheets for T-88. This is a two-component system. It is imperative that you know whether you need information on the Resin or the Hardener.

Resin: Pages 2-9

Hardener: Pages 10-18

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).

1. Product Identification

Product name	T-88 Resin, Part A
SDS Number	1100A000
Product type	Epoxy polymer mixture
Recommended use of the chemical and restrictions on use	Directed at, but not limited to, the adhesion of similar and dissimilar substrates.
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 Damage/Eye Irritation - Category 2 Skin Sensitization - Category 1 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3
<u>GHS Label Elements</u> 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.
Precautionary statements	
<u>Precautionary Statements</u> Prevention	P280 Wear protective gloves. Wear eye or face protection. P201 Obtain special instructions before use. P271 Use only outdoors or in a well-ventilated area. P264 Wash hands thoroughly after handling.
Response	P304 + 340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P313 Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
Disposal

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.
P401 Store at room temperature in a well-ventilated area.
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	90-100%
Diglycidyl Ether of Bisphenol F	28064-14-4	1-10%

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 Flush with water for 15 minutes holding eye lids open. Seek medical attention.

Ingestion Do not give liquids if victim is unconscious or very drowsy. Otherwise, give no more than 2 glasses of water and induce vomiting by giving 2 tablespoons syrup of ipecac (1 tablespoon and 1 glass of water for child). If ipecac is unavailable, give 2 glasses of water and induce vomiting by touching finger to back of throat. Keep head below hips while vomiting. Get medical attention.

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 symptoms as they appear. 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 (CO₂).
Dry chemical
Water Fog

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical Potential skin irritation. Epoxy in mass can create exotherm.

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 spill at source, dike area to prevent spreading, pump liquid to salvage tank or drum. Remaining liquid may be taken up on clay, diatomaceous earth, sawdust or other absorbent, and shoveled into disposal container.

Environmental precautions

Avoid dispersal of spilled material, 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

Use appropriate containment to avoid environmental contamination. 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	Epoxy Resin
Appearance	Clear viscous liquid
Physical State	Epoxy polymer mixture
Form	Liquid
Color	Water clear
Odor	Little or no odor
Density (Specific Gravity)	9.5-9.7 lb/gal (1.1-1.2)
Viscosity	8,000-10,000 cps @ 25°C
pH	Data not available
Melting point/freezing point	Data not available
Initial boiling point and boiling range	Data not available
Flash point	>300°F, Pensky-Martens Closed Cup
Evaporation rate	Slower than ether
Flammability (solid, gas)	Data not available
Upper/lower flammability limit (by volume)	
Upper flammability limit (by volume)	N/A
Lower flammability limit (by volume)	N/A
Material VOC	None
Vapor density	Heavier than air
Relative density	Not determined
Solubility in water	Negligible, in water
Partition coefficient: n-octanol/water	3
Auto-ignition temperature	300°C (572.00°F)
Decomposition temperature	Data not available

10. Stability and Reactivity

Reactivity	None
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 agents, Lewis and mineral acids.
Hazardous decomposition products	Oxides of carbon, aldehydes, 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	-

Irritation/Corrosion (components)

Component	Result	Species	Test	Exposure
Diglycidyl Ether of Bisphenol A	Skin – Erythema/Eschar 404 Acute Dermal Irritation/Corrosion	Rabbit	1.5 – 2	-
	Skin – Edema 404 Acute Dermal Irritation/Corrosion	Rabbit	1.0 – 1.5	-
	Eyes – 405 Acute Eye Irritation/Corrosion	Rabbit	0	-
	Eyes – Redness of the conjunctivae	Rabbit	0.7	-
	Skin – Moderate irritant	Rabbit		24 hrs
	Eyes – Mild irritant	Rabbit		-

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.

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

Specific target organ toxicity (repeated exposure) Not available.

Aspiration hazard

Not available.

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 or irritation
 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.

12. Ecological Information**Ecotoxicity**

No information on product itself.

Component	Result	Species	Exposure
Diglycidyl Ether of Bisphenol A	Acute LC50 1.3 mg/l – 203 Fish, Acute Toxicity Test	Fish – Fish	96 h
	Acute EC50 2.1 mg/l – 202 Daphnia sp. Acute Immobilization Test and Reproduction Test	Aquatic invertebrates. Water flea	48 h
	Acute NOEC 0.3 mg/l – 211 Daphnia Magna Reproduction Test	Aquatic invertebrates. Water flea	21 d
	Acute LC50 > 11 mg/l	Aquatic plants – Algae	72 h

Persistence and degradability

No information on product itself.

Bioaccumulative Potential

No information on product itself.

Component	LogPow	BCF	Potential
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Diglycidyl Ether of Bisphenol A	2.64 – 3.78	3 – 31 31.00	low
Diglycidyl Ether of Bisphenol F	3	-	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.
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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.

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-(phenoxyethyl)-	Yes	No	5 µg/day	No
Oxirane, 2-(chloromethyl)-	Yes	Yes	9 µg/day	No

EPA SARA 302 Extremely Hazardous Substances

None required.

EPA SARA 302/304/311/312 Hazardous Chemicals

Acute Health Hazard.

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 7, 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.

1. Product Identification

Product name	T-88 Adhesive Hardener, Part B
SDS Number	1100B00
Product type	Polyamide Mixture
Recommended use of the chemical and restrictions on use	Directed at, but not limited to, the adhesion of similar and dissimilar substrates.
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 Damage/Eye Irritation – Category 1 Skin Sensitization – Category 1 Toxic to Reproduction [Fertility, Unborn child] – Category 2 Specific Target Organ Toxicity (Single Exposure) [eyes] – Category 1 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3 Specific Target Organ Toxicity (Repeated Exposure) [skin, respiratory tract, kidneys, liver] – Category 1 Aquatic Hazard (Acute) – Category 1 Aquatic Hazard (Long-term) – Category 1
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GHS Label Elements**Hazard Pictograms**

Hazard Statements/Classification of substance or mixture	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H361 Suspected of damaging fertility or the unborn child. H370 Causes damage to organs: (eyes)
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- H372 Causes damage to organs through prolonged or repeated exposure: (skin, respiratory tract, kidneys, liver)
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

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.
 P271 Use only outdoors or in 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. Wear eye or face protection.
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 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.
 P310 Immediately call a POISON CENTER or physician.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
 P342 + P311 If experiencing respiratory symptoms: Call a POISON Center or physician.
 P362 + P354 Take off contaminated clothing and wash it before reuse.
 P391 Collect spillage.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

Response

Storage

Disposal

Hazards not otherwise classified (HNOC) None Available.

3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Polyamide Polymer Mixture	Proprietary	70 – 80%
Nonyl Phenol	84852-15-3	10 – 15%
Tris-2,4,6-(dimethylaminomethyl)phenol	90-72-2	1 – 10%
Triethylenetetramine	112-24-3	1 – 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

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical

attention. If necessary, call a poison center or physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

Eye contact

Flush with water for 15 minutes holding eye lids open. Check for and remove any contact lenses. Get medical attention. If necessary, call a poison center or physician.

Ingestion

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 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. Get medical attention. If necessary, call a poison center or physician. 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 collar, tie, belt, or waistband.

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

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments

Treat symptoms as they appear.

5. Fire-Fighting Measures

Suitable extinguishing media

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

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. Ammonia gas may be liberated at high temperatures. In case of incomplete combustion an increased formation of oxides of nitrogen (NOx) is to be expected.

**Hazardous decomposition products
Special protective actions for fire-fighters**

Carbon oxides, nitrogen oxides.
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

Use personal protective equipment. Wear self-contained breathing apparatus.

Further information

None known.

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 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 spill at source, dike area to prevent spreading, pump liquid to salvage tank or drum. Remaining liquid may be taken up on clay, diatomaceous earth, sawdust or other absorbent, and shoveled into disposal container.
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

7. Handling and Storage

Precautions for safe handling	Always wear protective, disposable gloves when handling epoxy hardeners to prevent exposure. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
Precautions/Recommendations for safe/proper storage	Store epoxy hardeners 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	If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls	Use appropriate containment to avoid environmental contamination. Do not allow spill to enter sewers or waterways.
Individual protection measures/Personal protective equipment	
Eye/face protection	Splash proof goggles or safety glasses with side shields are recommended. Always wear eye protection when sanding cured epoxy to avoid dust in eyes.
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	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	Polyamide
Appearance	Amber colored liquid
Physical State	
Form	Liquid
Color	Amber
Odor	Mild ammonia
Density (Specific Gravity)	0.95 – 0.97

Viscosity	25,000 – 30,000 CPS @77°F
pH	Not available
Melting point/freezing point	Not available
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
Upper flammability limit (by volume)	Not available
Lower flammability limit (by volume)	Not available
Material VOC	None
Vapor density	Heavier than air
Relative density	Not available
Solubility in water	Negligible, in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available

10. Stability and Reactivity

Reactivity	Stable under normal conditions.
Chemical Stability	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 exothermic reaction may produce heat, smoke and hazardous decomposition products.
Incompatible materials	Organic and mineral acids. Reactive metals (e.g. sodium, calcium, zinc, etc). Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Materials reactive with hydroxyl compounds. Oxidizing agents, amines, bases and reducing agents. Nitrous acid and other nitrosating agents. CAUTION! N-nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.
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
Nonyl Phenol	LD50 Dermal	Rabbit	2,031 mg/kg	-
	LD50 Oral	Rat	1,412 mg/kg	-

Tris-2,4,6-(dimethylaminomethyl)phenol	LD50 Oral	Rat	2,169 mg/kg	-
Triethylenetetramine	LD50 Oral	Rat	2,500 mg/kg	-

Irritation/Corrosion (components)

Classifies as non-corrosive per negative Corrositex Dermal Testing. Classifies as Serious eye damage Category 1 per GHS calculations of additivity.

Component	Result	Species	Test	Exposure
Tris-2,4,6-(dimethylaminomethyl)phenol	Skin – Corrosive	Rabbit	In vitro test	-
	Eyes – Severe Irritant	Rabbit	-	-
Triethylenetetramine	Eyes – Moderate irritant	Rabbit	-	24 hrs
	Skin – Severe irritant	Rabbit	-	24 hrs
	Eyes – Severe irritant	Rabbit	-	-

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.

Component	Category	Route of exposure	Target organs
Polyamide Polymer Mixture	Category 3		Respiratory tract irritation
Triethylenetetramine	Category 1		Eyes

Specific target organ toxicity (repeated exposure)

No information on product itself.

Component	Category	Route of exposure	Target organs
Polyamide Polymer Mixture	Category 2		Skin
Triethylenetetramine	Category 1		Respiratory tract
	Category 2		Skin, Liver, Kidneys

Aspiration hazard

No information on product itself.

Potential acute health effects

Eye Contact

Causes serious eye damage.

Inhalation

May cause respiratory irritation. May cause allergic skin reaction. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin Contact

Causes severe 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:

Respiratory tract irritation
 Reduced fetal weight
 Increase in fetal deaths
 Skeletal malformations

Skin Contact

Adverse symptoms may include the following:
 Pain or irritation
 Redness
 Blistering may occur
 Reduced fetal weight
 Increase in fetal deaths
 Skeletal malformations

Ingestion

Adverse symptoms may include the following:
 Stomach pains
 Reduced fetal weight
 Increase in fetal deaths
 Skeletal malformations

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

Suspected of damaging the unborn child.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates (ATEmix)

Route	ATE value
Oral	3,435.7 mg/kg
Dermal	N/A
Inhalation (vapors)	N/A

12. Ecological Information

Ecotoxicity

Component	Results	Species	Exposure
Nonyl Phenol	Acute EC50 – 950 mg/l	Bacteria	3 h static
	Acute EC50 – 0.085 mg/l	Daphnia	48 h static
	Acute LC50 – 0.05 mg/l	Fish	96 h static
Triethylenetetramine	Acute LC50 – 33,900 µg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute EC50 – 3,700 µg/l Fresh water	Aquatic plants – Green algae	96 h

Persistence and degradability

No information on product itself.

Bioaccumulative Potential

Component	LogPow	BCF	Potential
Nonyl Phenol	-1.48	-	low
Triethylenetetramine	-1.66 - -1.4	-	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. 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		Not regulated		
TDG		Not regulated		
IMO/IMDG	UN3082	Environmentally hazardous substances, liquid, n.o.s. (Nonyl Phenol)	Class 9 III	Marine Pollutant
IATA	UN3082	Environmentally hazardous substances, liquid, n.o.s. (Nonyl Phenol)	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.
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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.
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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 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.

EPA SARA 302/304/311/312 Hazardous Chemicals SARA 313

Acute Health Hazard, Chronic Health Hazard

Form R – Reporting requirements

Product Name		Concentration %		
Phenol		0 – 1%		
Component	%	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product Reportable Quantity (Lbs)
Phenol	1	Listed		

CERCLA Hazardous substances

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
CEPA Toxic substances**

None Required
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 7, 2020
Date of Last Revision September 27, 2019
Revision # 4.0
More Information 1-253-333-8118
Prepared by System Three Resins Inc.

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