

**1. Product Identification**

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<b>Product name</b>	Clear Coat Resin, Part A
<b>SDS Number</b>	0600A00
<b>Product type</b>	Epoxy polymer mixture.
<b>Manufacturer/Supplier information</b>	Directed at, but not limited to, the coating and laminating of fiber composites and wood.
<b>Company name</b>	SYSTEM THREE RESINS, INC.
<b>Address</b>	3500 W. Valley Hwy N Suite 105 Auburn, WA 98001-2436 United States
<b>Telephone</b>	1-253-333-8118
<b>Website</b>	www.systemthree.com
<b>Email</b>	support-08@systemthree.com
<b>Emergency Contact</b>	CHEMTREC (U.S. and CANADA) 1-800-424-9300 CHEMTREC (Outside the U.S.) 1-703-527-0585

**2. Hazard(s) Identification**

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<b>Classification of substance or mixture/Signal Word</b>	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
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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. H319 Causes serious eye irritation. H335 May cause respiratory irritation.
<b>Precautionary statements</b>	
<b><u>Precautionary Statements</u></b> <b>Prevention</b>	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. 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. 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.  
P313 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.  
**Storage** P308 + P313 If exposed or concerned: Get medical attention.  
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	60 – 70 %
Diglycidyl Ether of Bisphenol F	28064-14-4	5 – 10 %
Alkyl Glycidyl Ether	17557-23-2	30 – 40 %

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<sub>2</sub>), dry chemical, water fog.  
**Unsuitable extinguishing media** None known.

<b>Specific hazards arising from the chemical</b>	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.
<b>Hazardous decomposition products</b>	Decomposition products may include the following materials: Carbon dioxide Carbon monoxide
<b>Special protective actions for fire-fighters</b>	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.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Further information</b>	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

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<b>Personal precautions</b>	Wear proper personal protective equipment (PPE). Avoid direct contact with material. Proper PPE includes: disposable gloves, eye protection and skin protection.
<b>Emergency procedures</b>	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.
<b>Methods and materials for containment/cleanup</b>	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.
<b>Environmental precautions</b>	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

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<b>Precautions for safe handling</b>	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.
<b>Precautions/Recommendations for safe/proper storage</b>	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

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<b>Permissible exposure limit (OSHA)</b>	None established.
<b>Threshold limit value (ACGIH)</b>	None established.
<b>Appropriate engineering controls</b>	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.
<b>Environmental exposure controls</b>	Use appropriate containment to avoid environmental contamination. Do not allow spill to enter sewers or waterways.
<b>Individual protection measures/Personal protective equipment</b>	
<b>Eye/face protection</b>	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.
<b>Hand protection</b>	Always wear impervious gloves: butyl rubber, nitrile rubber, Neoprene, PVC disposable gloves,
<b>Skin protection</b>	Wear clean, body-covering clothing to avoid skin contact.
<b>Respiratory protection</b>	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.
<b>Special instructions for protection and hygiene</b>	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

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<b>Chemical family</b>	Epoxy Resin
<b>Appearance</b>	Clear liquid
<b>Physical State</b>	Epoxy polymer mixture
<b>Form</b>	Liquid
<b>Color</b>	Clear
<b>Odor</b>	Mild
<b>Density (Specific Gravity)</b>	9.47 lb/gal (1.1-1.3)
<b>Viscosity</b>	700 cps at 77 °F (25 °C)
<b>pH</b>	N/A
<b>Melting point/freezing point</b>	N/A
<b>Initial boiling point and boiling range</b>	N/A
<b>Flash point</b>	>300°F, Pensky-Martens Closed Cup
<b>Evaporation rate</b>	Slower than ether
<b>Flammability (solid, gas)</b>	Data not available
<b>Upper/lower flammability limit (by volume)</b>	N/A
<b>Material VOC</b>	None
<b>Vapor density</b>	Heavier than air
<b>Relative density</b>	Not determined
<b>Solubility in water</b>	Negligible
<b>Partition coefficient: n-octanol/water</b>	3
<b>Auto-ignition temperature</b>	300°C (572.00°F)
<b>Decomposition temperature</b>	N/A

## 10. Stability and Reactivity

<b>Reactivity</b>	No specific test data related to reactivity available for this product.
<b>Chemical Stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization 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 large mass as the ensuing exotherm may result in heat and smoke, resulting in hazardous decomposition products.
<b>Incompatible materials</b>	Strong oxidizing and reducing agents. Lewis and mineral acids.
<b>Hazardous decomposition products</b>	Oxides of carbon, aldehydes, and acids.

## 11. Toxicological Information

**Acute Toxicity** No comprehensive data is available on the product itself.

Component	Result	Species	Dose	Exposure
Diglycidyl Ether of Bisphenol A	LD50 Oral	Rat	11,400 mg/kg	-
	LD50 Dermal	Rat	2,000 mg/kg	-
Alkyl Glycidyl Ether	LD50 Oral	Rat	4,500 mg/kg	-
	LD50 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 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 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
Alkyl Glycidyl Ether	Category 3		Respiratory tract irritation
Diglycidyl Ether of Bisphenol F	Category 3		Respiratory tract irritation

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

**Aspiration hazard**

No information on product itself.

**Potential acute health effects****Eye Contact**

Causes serious eye 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 (ATE<sub>mix</sub>)**

Not available.

**12. Ecological Information****Ecotoxicity**

No information on 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
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 product itself.

Component	Test	Period	Result
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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 product itself.

Component	LogPow	BCF	Potential
Diglycidyl Ether of Bisphenol A	2.64 – 3.78	3 – 31 31.00	Low
Diglycidyl Ether of Bisphenol F	3.242	31	Low
Alkyl Glycidyl Ether	0.23	-	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 (Cargo)	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 12(b) – Proposed significant new use rules:** None Required.

**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.

**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 302/304/311/312 Substances**

Acute Health Hazard

**EPA SARA 313**

None Required

**United States inventory (TSCA 8b)**

All components are listed or exempted.

**CANADA**

**WHMIS (Canada)**

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

**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**



**Date of Preparation**

June 2, 2017

**Date of Last Revision**

April 17, 2016

**Revision #**

2.0

**More Information**

1-253-333-8118

**Prepared by**

N. Kim, 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**

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<b>Product name</b>	Clear Coat Hardener, Part B
<b>SDS Number</b>	0600B00
<b>Product type</b>	Curing Agent
<b>Recommended use of the chemical and restrictions on use</b>	Directed at, but not limited to, the coating and laminating of fiber composite and wood.
<b>Restrictions</b>	None known.
<b>Manufacturer/Supplier information</b>	
<b>Company name</b>	SYSTEM THREE RESINS, INC.
<b>Address</b>	3500 W. Valley Hwy, Suite Suite 105 Auburn, WA 98001-2436 United States
<b>Telephone</b>	1-253-333-8118
<b>Website</b>	www.systemthree.com
<b>Email</b>	support-08@systemthree.com
<b>Emergency Contact</b>	CHEMTREC (U.S. and CANADA)   1-800-424-9300 CHEMTREC (Outside the U.S.)   1-703-527-0585

**2. Hazard(s) Identification**

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<b>Classification of substance or mixture/Signal Word</b>	<b>DANGER</b> Acute Toxicity (oral, inhalation) – Category 4 Skin Corrosion/Irritation – Category 1 Serious Eye Damage/Eye Irritation – Category 1 Skin Sensitization – Category 1 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3 Aquatic Hazard (Acute) – Category 3 Aquatic Hazard (Long-term) – Category 3
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**GHS Label Elements****Hazard Pictograms**

<b>Hazard Statements/Classification of substance or mixture</b>	H302   Harmful if swallowed. H312   Harmful in contact with skin. H314   Causes severe skin burns and eye damage. H317   May cause an allergic skin reaction. H318   Causes serious eye damage. H332   Harmful if inhaled. H335   May cause respiratory irritation. H401   Toxic to aquatic life. H412   Harmful to aquatic life with long lasting effects.
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## Precautionary statements

### Precautionary Statements

#### Prevention

P260 Do not breathe dusts or mists.  
P261 Avoid breathing vapors.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.

#### Response

P273 Avoid release to the environment.  
P280 Wear protective gloves. Wear eye or face protection.  
P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P310 Immediately call a POISON CENTER/doctor.  
P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

#### Storage

P363 Wash contaminated clothing before reuse.  
P401 Store at room temperature in a well-ventilated area.

#### Disposal

P405 Store locked up.  
P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Hazards not otherwise classified (HNOC)

None Available.

## 3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Aliphatic Amines	Trade Secret	70 – 80%
Benzyl Alcohol	100-51-6	25 – 30%

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

## 4. First-Aid Measures

### Skin contact

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

### Eye contact

Hold eyelids apart, initiate and maintain gently and continuous irrigation until the patient receives medical attention. If medical care is not promptly available, continue to irrigate for one hour.

### Ingestion

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.

### Inhalation

Move to fresh air.

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

#### Notes to physician

Treat symptomatically.

#### Specific treatments

No specific treatments.

## 5. Fire-Fighting Measures

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<b>Suitable extinguishing media</b>	Alcohol-resistant foam, carbon dioxide (CO <sub>2</sub> ), dry chemical, water fog.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	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. May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions.
<b>Hazardous decomposition products</b>	Decomposition products may include the following materials: Carbon dioxide Carbon monoxide Nitrogen oxides
<b>Special protective actions for fire-fighters</b>	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.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Further information</b>	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

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<b>Personal precautions</b>	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Wear proper protective clothing, gloves and eye/face protection.
<b>Emergency procedures</b>	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.
<b>Methods and materials for containment/cleanup</b>	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.
<b>Environmental precautions</b>	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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<b>Precautions for safe handling</b>	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.
<b>Precautions/Recommendations for safe/proper storage</b>	Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep from freezing.

## 8. Exposure Controls/Personal Protection

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<b>Occupational Exposure Limits</b>	Not established.
<b>Appropriate engineering controls</b>	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.
<b>Environmental exposure controls</b>	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Do not allow spill to enter sewers or waterways.
<b>Individual protection measures/Personal protective equipment</b>	
<b>Eye/face protection</b>	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.
<b>Hand protection</b>	Always wear impervious gloves: butyl rubber, nitrile rubber, Neoprene, PVC disposable gloves,
<b>Skin protection</b>	Wear clean, body-covering clothing to avoid skin contact.
<b>Respiratory protection</b>	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.
<b>Special instructions for protection and hygiene</b>	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

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<b>Chemical family</b>	Amine curing agent
<b>Appearance</b>	Clear liquid
<b>Physical State</b>	Amine mixture
<b>Form</b>	Liquid
<b>Color</b>	Colorless
<b>Odor</b>	Ammoniacal
<b>Density (Specific Gravity)</b>	0.9 – 1.0
<b>Viscosity</b>	190 – 210 CPS @ 77°F (25°C)
<b>pH</b>	Alkaline
<b>Melting point/freezing point</b>	Not available
<b>Initial boiling point and boiling range</b>	Not available
<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>	Not available

Vapor density	Not available
Relative density	Not available
Solubility in water	< 0.1 g/L
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	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Epoxy resins and epoxy resin hardeners react with each other producing heat. They should not be mixed with each other under uncontrolled conditions or in a large mass as the ensuing exotherm may result in heat and smoke.
Incompatible materials	Strong oxidizing agents and mineral acids.
Hazardous decomposition products	Oxides of carbon, nitrogen
Other hazards	None known.

## 11. Toxicological Information

**Acute Health Hazard (components)** No comprehensive data (ingestion, inhalation, dermal) on mixture (product).

Component	Result	Species	Dose	Exposure
n-Aminoethylpiperazine	LD Oral	Rat	>1,000 mg/kg	-
	LD50 Dermal	Rabbit	866 mg/kg	-
Isophorone Diamine	LD50 Oral	Rat	1,030 mg/kg	-
	LD50 Dermal	Rat	>2,000 mg/kg	-
	LC50 Inhalation	Rat	>5.01 mg/l	4 h
Benzyl Alcohol	LD50 Oral	Rat	1,620 mg/kg	-
	LC50 Inhalation	Rat	>4,178 mg/kg	4 h, aerosol
Polyoxypropylenediamine	LD50 Oral	Rat	2,885 mg/kg	-
	LD50 Dermal	Rabbit	2,980 mg/kg	-
	LC50 Inhalation	Rat	>0.74 mg/l	-
2-Methy-1,5-pentamethylenediamine	LD50 Dermal	Rabbit	1,870 mg/kg	-
	LD50 Oral	Rat	1,170 mg/kg	-
	LC50 Inhalation	Rat	4.9 mg/l	1 h

**Irritation/Corrosion (components)** Classifies as Skin Corrosion Category 1 per positive Corrositex Dermal testing.  
Classifies as Serious Eye Damage Category 1 per GHS calculations of additivity.

Component	Result	Species	Test	Exposure
n-Aminoethylpiperazine	Eyes-Moderate irritant	Rabbit	-	24 hrs

	Skin-Severe irritant	Rabbit	-	24 hrs
Isophorone Diamine	Skin – Corrosive	Rabbit	OECD 404 Acute Dermal Irritation/Corrosion	-
	Eyes – Corrosive	Rabbit	OECD 405 Acute Eye Irritation/Corrosion	-
Benzyl Alcohol	Eye – Irritant	Rabbit	OECD 405 Acute Eye Irritation/Corrosion	-
Polyoxypropylenediamine	Skin – Corrosive	Rabbit	Similar to OECD Guideline 404	-
	Eye – Risk of serious damage to eyes	Rabbit	Similar to OECD Guideline 405	-
2-Methy-1,5-pentamethylenediamine	Skin – Corrosive	-	-	-
	Eye – Corrosive	-	-	-

**Sensitization** No information on product itself.

Component	Test	Route of exposure	Species	Result
n-Aminoethylpiperazine	OECD 406 Skin Sensitization	Skin	Guinea pig	Sensitizing

**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
2-Methy-1,5-pentamethylenediamine	3		Respiratory tract irritation

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

**Aspiration hazard** No information on product itself.

**Potential acute health effects**

- Eye Contact** Causes serious eye damage.
- Inhalation** May cause respiratory irritation. 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** Harmful if swallowed. May cause burns to mouth, throat and stomach.

**Symptoms related to the physical, chemical and toxicological characteristics**

- Eye Contact** Adverse symptoms may include the following:  
Pain or irritation  
Watering  
Redness
- Inhalation** Adverse symptoms may include the following:  
Respiratory tract irritation  
Coughing
- Skin Contact** Adverse symptoms may include the following:  
Pain or irritation  
Redness

**Ingestion**

Blistering may occur

Adverse symptoms may include the following:

Stomach pains

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

No data is available for this product.

**Potential chronic health effects****General**

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

**Carcinogenicity**

No significant effects or critical hazards.

**Mutagenicity**

No significant effects or critical hazards.

**Teratogenicity**

No significant effects or critical hazards.

**Developmental effects**

No significant effects or critical hazards.

**Fertility effects**

No significant effects or critical hazards.

**Numerical measures of toxicity****Acute toxicity estimates (ATEmix)**

Route	ATE value
Oral	1466.7 mg/kg
Dermal	2430.1 mg/kg
Inhalation (vapors)	12.26 mg/l

**12. Ecological Information****Ecotoxicity**

No data is available on the product itself.

Component	Test	Endpoint	Exposure	Species	Result
n-Aminoethylpiperazine	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 hrs	Algae	>1,000 mg/l
Polyoxypropylenediamine	OECD 203 Fish, Acute Toxicity Test	Acute EC50	96 hr Semi-static	Fish	>15 mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hr Static	Fish	772.14 mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic NOEC	72 hr Static	Algae	0.32 mg/l
2-Methy-1,5-pentamethylenediamine	-	EC50	72 h	Algae	>100 mg/l
	-	EC50	48 h	Daphnia magna	19.8 mg/l
	-	-	-	Fish	1825 mg/l

**Persistence and degradability**

No data is available on the product itself.

Component	Test	Period	Result
n-Aminoethylpiperazine	OECD 301F Ready Biodegradability – Manometric Respirometry Test	28 days	0%
Polyoxypropylenediamine	OECD 301B Ready Biodegradability – CO2 Evolution Test	28 days	0%

**Bioaccumulative Potential**

No data is available on the product itself.

Component	LogPow	BCF	Potential
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n-Aminoethylpiperazine	-1.48	-	low
Polyoxypropylenediamine	1.34	-	low

#### Mobility in Soil

<b>Soil/water partition coefficient (KOC)</b>	No data is available on the product itself.
<b>Other adverse effects</b>	No known significant effects or critical hazards.

### 13. Disposal Considerations

<b>Waste from residues/ unused products</b>	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.
<b>Contaminated packaging</b>	Dispose of container and unused contents in accordance with federal, state and local requirements.

### 14. Transport Information

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

#### International Transport Regulations

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

\*PG: Packing group

<b>Special precautions for user:</b>	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

<b>U.S. Federal Regulations</b>	<b>United States – TSCA 12(b) – Chemical export notification:</b> None Required. <b>United States – TSCA 5(a)2 – Final significant new use rules:</b> Not Listed. <b>United States – TSCA 5(a)2 – Proposed significant new use rules:</b> Not Listed. <b>United States – TSCA 5(e) – Substance consent order:</b> Not listed.
<b>Clean Air Act – Ozone Depleting Substances (ODS)</b>	This product does not contain nor is it manufactured with ozone depleting substances.
<b>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</b>	None.



**California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer.

Ingredient Name	Cancer	Reproductive
Methyloxirane	Yes	No

**EPA SARA 302 Extremely Hazardous Substances**

None known.

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

Acute Health Hazard

**SARA 313**

None.

**Form R – Reporting requirements**

**CERCLA Hazardous substances**

Component	%	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product Reportable Quantity (Lbs)
Propylene oxide			100	

**United States inventory (TSCA 8b)**

All components are listed or exempted.

**CANADA**

**WHMIS (Canada)**

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

**Canadian NPRI**

None required.

**CEPA Toxic substances**

None required.

**INTERNATIONAL REGULATIONS**

**International Lists**

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

**Canada inventory:** All components are listed or exempted.

**Korea inventory:** All components are listed or exempted.

**Japan inventory:** All components are listed or exempted.

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

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

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

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

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

**HMIS Rating**

Health	3
Flammability	1
Physical Hazard	0

**Date of Preparation**

June 5, 2017

**Date of Last Revision**

May 5, 2016

**Revision #**

2.0

**More Information**

1-253-333-8118

**Prepared by**

N. Kim, 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.