

**1. Product Identification**

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<b>Product name</b>	SilverTip Yacht Primer, Part A
<b>SDS Number</b>	1710A00
<b>Product type</b>	Epoxy Resin Mixture
<b>Recommended use of the chemical and restrictions on use</b>	Paint primer for marine use.
<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@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****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****Precautionary Statements**  
**Prevention**

P261	Avoid breathing vapors.
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.

<b>Response</b>	<p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P304 + 340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P313 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P302+352+363 IF ON SKIN: Wash with soap and water. Take off contaminated clothing and wash before reuse.</p> <p>P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p>
<b>Storage</b>	P308 + P313 If exposed or concerned: Get medical attention.
<b>Disposal</b>	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.
<b>Hazards not otherwise classified (HNOC)</b>	None Available.

### 3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Diglycidyl Ether of Bisphenol A	25068-38-6	50 – 60%
Dipropylene glycol n-butyl ether	29911-28-2	25 – 30%
Dipropylene glycol dimethyl ether	111109-77-4	15 – 20%

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

### 4. First-Aid Measures

<b>Skin contact</b>	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.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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.
<b>Inhalation</b>	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**

<b>Notes to physician</b>	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	No specific treatment.

### 5. Fire-Fighting Measures

<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.
<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>Occupational Exposure Limits</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 resin mixture
<b>Form</b>	Liquid
<b>Color</b>	Water clear
<b>Odor</b>	Low odor
<b>Density (Specific Gravity)</b>	8.9-9.2 lbs./gal (1.07-1.1 g/cm <sup>3</sup> )
<b>Viscosity</b>	50 cps @ 25°C
<b>pH</b>	Data not available
<b>Melting point/freezing point</b>	Not applicable
<b>Initial boiling point and boiling range</b>	Not applicable
<b>Flash point</b>	175°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>	Data not available
<b>Material VOC</b>	400 – 450 grams/liter
<b>Vapor density</b>	Heavier than air
<b>Relative density</b>	Not determined
<b>Solubility in water</b>	Negligible, in water
<b>Partition coefficient: n-octanol/water</b>	Data not available
<b>Auto-ignition temperature</b>	Data not available
<b>Decomposition temperature</b>	Data not available

## 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.
<b>Other hazards</b>	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	-
Dipropylene glycol n-butyl ether	LD50 Oral	Rat	3,700 mg/kg	-
	LD50 Dermal	Rat	>2,000 mg/kg	
	LC50 Inhalation	Rat	>2.04 mg/l	4 h
Dipropylene glycol dimethyl ether	LD50 Oral	Rat	3,300 mg/kg	-
	LD50 Dermal	Rat	>2,000 mg/kg	-
	LC50 Inhalation	Rat	>5.25 mg/l	4 h

**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
Dipropylene glycol n-butyl ether	Slight irritation	Rat	Skin	-
Dipropylene glycol dimethyl ether	Slight irritation	-	Eye	-

**Sensitization** No information on the product itself.

**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
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Diglycidyl Ether of Bisphenol A	Category 3		Respiratory tract irritation
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**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 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
Dipropylene glycol n-butyl ether	Acute LC50 >1,000 mg/l	Daphnia	48 h
	Acute LC50 841 mg/l	Guppy	96 h

Dipropylene glycol dimethyl ether	Acute LC50 >1,000 mg/l	Guppy	96 h
	Acute LC50 >1,000 mg/l	Daphnia	24 h

**Persistence and degradability** No information on product itself.

**Bioaccumulative Potential** No information on product itself.

Component	LogPow	BCF	Potential
Diglycidyl Ether of Bisphenol A	3	-	Low
Dipropylene glycol n-butyl ether	<3	<100	Low
Dipropylene glycol dimethyl ether	<3	<100	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 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)  
 California Prop. 65**

None.

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient Name	Cancer	Reproductive
Oxirane, 2-(phenoxyethyl)-	Yes	No

**EPA SARA 302 Extremely Hazardous Substances**

None required.

**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**

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**HMIS Rating**



**Date of Preparation**

July 28, 2017

**Date of Last Revision**

June 1, 2015

**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>	SilverTip <sup>®</sup> Yacht Primer, Part B
<b>SDS Number</b>	1710B00
<b>Product type</b>	Polyamide Coating Hardener
<b>Recommended use of the chemical and restrictions on use</b>	Paint primer for marine use.
<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@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 1 Skin Sensitization - Category 1
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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 damage.
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**Precautionary statements**

**Precautionary Statements**  
**Prevention**

P261	Avoid breathing vapors.
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.

<b>Response</b>	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.
<b>Storage</b>	P308 + P313 If exposed or concerned: Get medical attention.
<b>Disposal</b>	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.
<b>Hazards not otherwise classified (HNOC)</b>	None Available.

### 3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Polyamide Resin	Trade Secret	15 – 25%
Titanium Dioxide	13463-67-7	10 – 15%
Isopropyl Alcohol	67-63-0	1 – 2%

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

### 4. First-Aid Measures

<b>Skin contact</b>	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.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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.
<b>Inhalation</b>	Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	
<b>Notes to physician</b>	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	No specific treatment.

### 5. Fire-Fighting Measures

<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>	Potential skin irritation. Toxic fumes may be evolved when this substance is burned. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated.
<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 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). 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>Occupational Exposure Limits</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 Hardener
<b>Appearance</b>	Gray liquid
<b>Physical State</b>	Polyamide/water mixture
<b>Form</b>	Liquid
<b>Color</b>	Gray
<b>Odor</b>	Mild
<b>Density (Specific Gravity)</b>	11.5 – 11.7 lbs/gal (1.38 – 1.40 g/cm <sup>3</sup> )
<b>Viscosity</b>	2,300 – 2,500 CPS @ 25°C
<b>pH</b>	9.57
<b>Melting point/freezing point</b>	Not applicable
<b>Initial boiling point and boiling range</b>	Not applicable
<b>Flash point</b>	>212°F (>100°C), 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>	Data not available
<b>Material VOC</b>	
<b>Vapor density</b>	Heavier than air
<b>Relative density</b>	Not determined
<b>Solubility in water</b>	Negligible, in water
<b>Partition coefficient: n-octanol/water</b>	Data not available
<b>Auto-ignition temperature</b>	Data not available
<b>Decomposition temperature</b>	Data not available

## 10. Stability and Reactivity

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<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>	None known.
<b>Incompatible materials</b>	Strong oxidizing and reducing agents. Lewis and mineral acids.
<b>Hazardous decomposition products</b>	Oxides of carbon, aldehydes, and acids.
<b>Other hazards</b>	None known.

## 11. Toxicological Information

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

Component	Result	Species	Dose	Exposure
Polyamide Resin	LD50 Oral	Rat	2,960 mg/kg	-
	LD50 Dermal	Rabbit	>5,000 mg/kg	-

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

Component	Result	Species	Test	Exposure
Polyamide Resin	Moderate irritation	-	-	-
	Severe eye irritation	-	-	-

**Sensitization** No information on the product itself.

**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.

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

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

### **Potential acute health effects**

<b>Eye Contact</b>	Causes serious eye damage.
<b>Inhalation</b>	May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.
<b>Skin Contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Ingestion</b>	No specific data.

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

<b>Eye Contact</b>	Adverse symptoms may include the following: Pain Watering Redness
<b>Inhalation</b>	Adverse symptoms may include the following:

	Respiratory tract irritation Coughing
<b>Skin Contact</b>	Adverse symptoms may include the following: Irritation Redness
<b>Ingestion</b>	No specific data.
<b><u>Delayed and immediate effects and also chronic effects from short and long term exposure</u></b>	Not available.
<b><u>Potential chronic health effects</u></b>	
<b>General</b>	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.
<b><u>Numerical measures of toxicity</u></b>	
<b><u>Acute toxicity estimates (ATEmix)</u></b>	No specific data.

## 12. Ecological Information

**Ecotoxicity** No information on product itself.

Component	Result	Species	Exposure
Isopropyl Alcohol	Acute LC50: 10,000 mg/l	Artemia salina	24 h
	Acute LC50: 10,000 mg/l	Daphnia magna	24 h
	Acute LC50: 900 – 1,950 gm/l	Crangon crangon	48 h
	Acute LC50: 750 – 1,650 gm/l	Crangon crangon	96 h

**Persistence and degradability** No information on product itself.

**Bioaccumulative Potential** No information on product itself.

Component	LogPow	BCF	Potential
Isopropyl Alcohol	0.05	-	-

### **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

## Contaminated packaging

this material and its containers in a safe way. Contact supplier if guidance is required.

Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

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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		Non-regulated		
IATA (Cargo)		Non-regulated		

\*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

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### 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) California Prop. 65

None.

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

#### EPA SARA 302 Extremely Hazardous Substances

None required.

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

None.

#### SARA 313

None required.

#### Form R – Reporting requirements

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

All components are listed or exempted.

### CANADA

#### WHMIS (Canada)

None.

#### 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

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### HMIS Rating

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

<b>Date of Preparation</b>	July 31, 2017
<b>Date of Last Revision</b>	June 1, 2015
<b>Revision #</b>	2.0
<b>More Information</b>	1-253-333-8118
<b>Prepared by</b>	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.





# SAFETY DATA SHEET


## 1. Product Identification

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<b>Product Name</b>	WR-LPU Paint Base(s)	
<b>SDS Number</b>	1800A00	
<b>Product Type</b>	Polyurethane Dispersion Mixture	
<b>Recommended Use Of The Chemical And Restrictions On Use</b>	Marine top coat paint	
<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 98991-2436 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><u>Signal Word</u></b>	Danger
<b><u>Classification of the substance or mixture</u></b>	: Toxic to reproduction Category 1B
<b><u>GHS Label Elements</u></b> <b>Hazard Pictograms</b>	
<b><u>Hazard Statements</u></b>	: H360 May damage fertility or the unborn child.

<b><u>Precautionary Statements</u></b>	
<b>Prevention</b>	: P202 Do not handle until all safety precautions have been read and understood. : P281 Use personal protective equipment as required.
<b>Response</b>	: P308 + P313 If exposed or concerned: Get medical attention.
<b>Storage</b>	: P401 Store above 32 °F / 0 °C
<b>Disposal</b>	: P501 Dispose of contents / container in accordance with all local, regional, national and international regulations.
<b>Supplemental Label Elements</b>	: Do not taste or swallow. Avoid contact with skin or clothing. Wash thoroughly after handling.

**Hazards not otherwise classified** : Causes digestive tract burns. Prolonged or repeated contact may dry skin and cause irritation.

### 3. Composition/Information On Ingredients

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Chemical Name	CAS Number	Content (% By Weight)
1-methyl, 2-Pyrrolidinone	872-50-4	5-10 %
2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	25265-77-4	1-5%
1,2-propanediol	57-55-6	1-5%
Triethylamine	121-44-8	1-5%

Any concentration shown as a range is to protect confidentiality.

### 4. First-Aid Measures

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#### Description of first aid measures

<b>Eye contact</b>	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contacts lenses. Continue to rinse for at least 10 minutes. Get medical attention.
<b>Inhalation</b>	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. 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. 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.
<b>Skin Contact</b>	Wash skin thoroughly with soap and water or use recognized skin cleaner. 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 irritation persists. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	Wash out mouth with water. 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. 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.

#### Most important symptoms/effects, acute and delayed

##### Potential acute effects

<b>Eye contact</b>	: No known significant effects or critical hazards.
<b>Inhalation</b>	: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Skin contact</b>	: Causes skin irritation.

**Ingestion** : Corrosive to the digestive tract. Causes burns.

**Over-exposure signs/symptoms**

**Eye contact** : No specific data

**Inhalation** : Adverse symptoms may include the following:  
Reduced fetal weight  
Increased fetal deaths  
Skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
Irritation  
Dryness  
Cracking  
Reduced fetal weight  
Increased fetal deaths  
Skeletal malformations

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

**Indications 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 treatment** : No specific treatment

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear a properly fitted NIOSH certified respirator, or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

## 5. Fire-Fighting Measures

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**Suitable extinguishing media** : All extinguishing media are suitable.

**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 harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
Carbon dioxide  
Carbon monoxide  
Nitrogen oxides  
Aldehydes  
Organic acids

**Special protective actions for fire-fighters** : Promptly evacuate 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.

**Remarks** This material will not support combustion unless the water has evaporated.

## 6. Accidental Release Measures

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### Personal precautions, protective equipment and emergency procedures

**For non-emergency personal** : 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 properly fitted NIOSH certified respirator when ventilation is inadequate. Wear the appropriate personal protective equipment.

**For emergency responders** : 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 information in "For non-emergency personnel".

**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)

### Methods and materials for containment and clean up

**Small spill** : Stop leak if without risk. Ventilate area. Move containers from spill area. Dilute with water and mop up. Alternatively, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak without risk. Ventilate area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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. Note: See section 1 for emergency contact information and section 13 for waste disposal.

## 7. Handling And Storage

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**Precautions for safe handling** : Always wear personal protective equipment when handling (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure – obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear an appropriate respirator. 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.

<b>Advice on general occupational hygiene</b>	: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
<b>Conditions for safe storage, including any incompatibilities</b>	: Store between 40 to 90 °F (4-32 °C). Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, out of the reach of children or pets. Keep container tightly closed and sealed until ready for use. Do not store in unlabeled containers. Store in original container, protected from direct sunlight.
<b>Chemical incompatibilities</b>	: None known.

## 8. Exposure Controls/Personal Protection

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### Control parameters

#### Occupational exposure limits

<b>Ingredient</b>	<b>Exposure limit</b>
1-methyl, 2-Pyrrolidinone	<b>AIHA WEEL (United States, 10/2011).</b> <b>Absorbed through skin.</b> TWA: 10 ppm 8 hours.
2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	None established
1,2-propanediol	None established
Triethylamine	<b>ACGIH TLV (United States, 4, 2014).</b> <b>Absorbed through skin.</b> TWA: 1 ppm/8 hours. TWA: 4.1 mg/m/8 hours STEL: 3 ppm/15 minutes STEL: 12 mg/m/15 minutes <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 10 ppm/8 hours TWA: 40 mg/m/8 hours STEL: 60 mg/m/15 minutes <b>OSHA PEL (United States 2/2013).</b> TWA: 25 ppm/8hours TWA: 100 mg/m/8hours

**Appropriate engineering controls** : Use only with adequate ventilation. Wear personal protection equipment when handling.

**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

**Hygiene measures** : 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Splash proof goggles or safety spectacles with side shields are recommended.

<b>Hand protection</b>	: Always wear impervious gloves, neoprene, vinyl or rubber.
<b>Skin protection</b>	: Wear clean, body-covering clothing to avoid skin contact.
<b>Respiratory protection</b>	: Use a properly fitted NIOSH certified respirator, or air-fed respirator complying with an approved standard if 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>General hygiene during/after use</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>	: Aqueous Urethane
<b>Physical State</b>	: Aqueous Solution
<b>Form</b>	: Liquid
<b>Color</b>	: Translucent
<b>Odor</b>	: Mild
<b>Odor threshold</b>	: Not determined
<b>Density (Specific gravity)</b>	: 8.74 lbs. /gal. (1.05)
<b>Viscosity</b>	: 800 cps @ 25°C
<b>pH</b>	: 8-8.5
<b>Melting point/freezing point</b>	: Data not available
<b>Initial boiling point and boiling range</b>	: Approximately 212 °F (100 °C)
<b>Flash point</b>	: >212 °F (100 °C) Closed Cup
<b>Evaporation rate</b>	: Data not available
<b>Flammability (solid, gas)</b>	: Data not available
<b>Upper/lower flammability or explosive limits</b>	: Data not available
<b>Upper flammability limit (by volume)</b>	: N/A
<b>Lower flammability limit (by volume)</b>	: N/A
<b>Material VOC</b>	: = <370 grams/liter
<b>Vapor density</b>	: Heavier than air
<b>Relative density</b>	: Not determined
<b>Solubility</b>	: Data not available
<b>Auto-ignition temperature</b>	: Data not available
<b>Decomposition temperature</b>	: Data not available

## 10. Stability And Reactivity

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<b>Reactivity</b>	: No specific data
<b>Chemical stability</b>	: Stable
<b>Possibility of hazardous reactions</b>	: Hazardous polymerization will not occur
<b>Conditions to avoid</b>	: No specific data
<b>Incompatible materials</b>	: No specific data
<b>Hazardous decomposition products</b>	: No specific data

## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

Ingredient	Result	Species	Dose	Exposure	Hazard Statement Code(s)
1-methyl, 2-Pyrrolidinone	LC50 Inhalation	Rat	>5.1 mg/l	4 hours	H315, H319, H335, H360D, H370
	LD50 Dermal	Rabbit	8000 mg/kg	-	
	LD50 Dermal	Rat	7000 mg/kg	-	
	LD50 Oral	Rat	3600 mg/kg	-	
	LD50 Oral	Rat	4150 mg/kg	-	
	LC50 Inhalation vapor	Rat	7.1 mg/l	-	
	LD50 Oral	Rabbit	570 mg/kg	4 hours	
2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	LD50 Oral	Rat	>3,200 mg/kg	-	H315, H319, H335, H412
	LD50 Dermal	Rabbit	>15,200 mg/kg	-	
	LD50 Dermal	Guinea Pig	>19,000 mg/kg	-	
	LCLo	Rat	>2.73 mg/l	6 hours	
	LCLo	Rat	>3.55 mg/l	6 hours	
1,2-propanediol	LD50 Oral	Rat	>5,000 mg/kg	-	H302, H315, H317, H319, H335, H336, H412
	LC50 Inhalation	Rabbit	>20mg/l	4 hours	
	LD50 Dermal	Rabbit	>2,000 mg/kg	-	
Triethylamine	LD50 Oral	Rat	460 mg/kg	-	H302, H312, H314, H332
	LD50 Dermal	Rabbit	570 mg/kg	-	

#### Irritation / Corrosion

Ingredient	Result	Species	Dose	Exposure	Hazard Statement Code(s)
1-methyl, 2-Pyrrolidinone	Skin irritant	-	-	-	H315
2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	Slight irritation	Rabbit	-	24 hours	H315
1,2-propanediol	May cause slight transient skin irritation.	-	-	-	H315
Triethylamine	Hazardous to skin	-	-	-	H314

#### Mutagenicity

Ingredient	Test	Experiment	Hazard Statement Code(s)
1-methyl, 2-Pyrrolidinone	Ames	In vitro: Subject: Bacteria / negative	-
2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	Ames	In vitro: Subject: Bacteria / negative	-
		In vitro: Subject: Chromosomal aberration/ negative	-
		In vitro: Subject: Mammalian / negative	-
		In vitro: Subject: Bacteria / negative	-
Triethylamine	-	In vitro: Subject: Bacteria / negative	-
		In vitro	

<b><u>Carcinogenicity</u></b>	No data available.
<b><u>Reproductive toxicity</u></b>	No data available.
<b><u>Teratogenicity</u></b>	No data available.
<b><u>Sensitization</u></b>	Not sensitizing

**Specific target organ toxicity (single exposure)**

<b>Ingredient</b>	<b>Category</b>	<b>Route of Exposure</b>	<b>Hazard Statement Code(s)</b>
1-methyl, 2-Pyrrolidinone	Cat. 3	Respiratory tract irritation.	-

**Specific target organ toxicity (repeated exposure)**

No data available

**Aspiration hazard**

No data available

**Potential acute health effects**

<b>Eye contact</b>	: No know significant effects or critical hazards.
<b>Inhalation</b>	: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Skin contact</b>	: Causes skin irritation.
<b>Ingestion</b>	: Corrosive to the digestive tract. Causes burns.

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

<b>Eye contact</b>	: No specific data.
<b>Inhalation</b>	: Adverse symptoms may include the following: reduced fetal weight, increase in fetal deaths, skeletal malformations
<b>Skin contact</b>	: Adverse symptoms may include the following: Irritation, dryness, cracking, reduced fetal weight, increase in fetal deaths, skeletal malformation.
<b>Ingestion</b>	: 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**

**Short term exposure**

<b>Potential immediate effects</b>	: Not available
<b>Potential delayed effects</b>	: Not available

**Long term exposure**

<b>Potential immediate effects</b>	: Not available
<b>Potential delayed effects</b>	: Not available



### Potential chronic health effects

<b>Ingredient</b>	<b>Result</b>	<b>Species</b>	<b>Dose</b>	<b>Exposure</b>
Triethylamine	Sub-chronic NOAEC inhalation vapor	Rat	247	28 weeks; 6 hours per day

**General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : May damage the unborn child.

**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

<b>Route</b>	<b>ATE value</b>
Oral	15889.9 mg/kg
Dermal	31585.9 mg/kg
Inhalation (gases)	249362.2 ppm
Inhalation (vapors)	393.4 mg/l
Inhalation (dust and mists)	83.12 mg/l

## **12. Ecological Information**

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### Toxicity

<b>Ingredient</b>	<b>Result</b>	<b>Species</b>	<b>Exposure</b>
1-methyl, 2-Pyrrolidinone	Acute EC50 >9000 mg/l	Bacteria	48 hours
	Acute EC50 >1000 mg/l	Daphnia	24 hours
	Acute EC50 >600 mg/l	Micro-organism	.5 hours
	Acute IC50 >500 mg/l	Algae	72 hours
	Acute LC50 >500 mg/l	Fish	96 hours
2,2,4-Trimethyl-1,3-pentanediol	Chronic NOEC 12.5 mg/l	Daphnia	21 days
	Acute LC50 33mg/l	Fish	96 hours
Monoisobutyrate	Acute EC50	Daphnia	
Triethylamine	Acute EC50 1.167 mg/l	Algae	96 hours
	Acute EC50 95 mg/l	Bacteria	17 hours
	Acute EC50 17 mg/l	Daphnia	48 hours
	Acute LC50 36 mg/l	Fish	96 hours
	Acute NOAEC 12 mg/l	Daphnia	48 hours
	Acute NOAEC 16 mg/l	Fish	-
	Chronic LC50 137 mg/l	Fish	60 days
	Chronic NOEC 7.1 mg/l	Daphnia	7 days
	Chronic NOEC 3.2 mg/l	Fish	60 days

### Persistence and degradability

<b>Ingredient</b>	<b>Test</b>	<b>Results</b>	<b>Dose</b>	<b>Inoculum</b>
1-methyl, 2-Pyrrolidinone	301C Ready Biodegradability Modified MITI Test (I)	73% - Readily - 28 days	-	-

2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	Ready Biodegradability- CO2 Evolution Test	77% Readily – 28 days	-	-
1,2-propanediol	Ready Biodegradability-	72-100% - 28 days	-	-
Triethylamine	OECD 301B Ready Biodegradability- CO2 Evolution Test	80% Readily – 21 days	-	-

#### **Bioaccumulative potential**

<b>Ingredient</b>	<b>LogPow</b>	<b>BCF</b>	<b>Potential</b>
1-methyl, 2-Pyrrolidinone	0.46	.2	Low
2,2,4-Trimethyl-1,3-pentanediol Monoisobutyrate	-	-	No data available
1,2-propanediol	-	-	Not expected to bioaccumulate
Triethylamine	1.45	<.5	Low

#### **Mobility in soil**

**Soil/water partition coefficient** : Not available  
**Other adverse effects** : No known significant effects or critical hazards.

### **13. Disposal Considerations**

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**Waste Disposal Method** The generation of waste should be avoided wherever possible. Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus product via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

### **14. Transport Information**

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	<b>DOT Classification</b>	<b>TDG Classification</b>	<b>Mexico Classification</b>	<b>ADR/RID</b>	<b>IMDG</b>	<b>IATA</b>
<b>UN Number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-	-	-	-
<b>Transport hazard class(s)</b>	-	-	-	-	-	-
<b>Packing group</b>	-	-	-	-	-	-
<b>Environmental hazards</b>	No.	No.	No.	No.	No.	No.

### **15. Regulatory Information**

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**U.S. Federal regulations** : **United States Inventory (TSCA 8b)**: All components are listed or exempted.  
: **Clean Water Act (CWA) 311**: Triethylamine

<b>Clean Air Act Section 112(b) Hazardous Air Pollutants</b>	<b>Ingredient name</b>	<b>CAS #</b>	<b>%</b>
	Triethylamine	121-44-8	1.8

	<b>Product name</b>	<b>CAS number</b>	<b>%</b>
<b>Form R – Reporting requirements</b> <b>SARA Title III Section 313</b>	1-methyl, 2-Pyrrolidinone	872-504	8.5
	Triethylamine	121-44-8	1.8
	1-methyl, 2-Pyrrolidinone	872-504	8.5
	Triethylamine	121-44-8	1.8

#### State regulations

**Massachusetts** : The following components are listed: 1-methyl, 2-Pyrrolidinone, Triethylamine

**New York** : The following components are listed: Triethylamine

**New Jersey** : The following components are listed: 1-methyl, 2-Pyrrolidinone, Triethylamine

**Pennsylvania** : The following components are listed: 1-methyl, 2-Pyrrolidinone, Triethylamine

#### California Prop. 65

**Warning:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<b>Ingredient</b>	<b>Cancer</b>	<b>Reproductive</b>	<b>No significant risk</b>	<b>Maximum acceptable dosage level</b>
1-methyl, 2-Pyrrolidinone	No	Yes	No	3200 µg/day (inhalation)

#### International regulations

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

**Chemical Weapons** : Not listed

**Convention List Schedule I, II & III Chemicals**

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

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**Hazardous Material Information System** : Health 3\*  
: Flammability 1  
: Physical hazards 1  
: Personal protection

**HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks.**

**Date of Preparation** June 1, 2015  
**More Information** 1-253-333-8118  
**Prepared By** R. Wirtz

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