1. Product Identification

Product name: WR-LPU Crosslinker
SDS Number: 18XXX
Product type: Polyaziridine solution
Recommended use of the chemical and restrictions on use: Marine top coat paint.
Restrictions: None known

Manufacturer/Supplier information

Company name: SYSTEM THREE RESINS, INC.
Address: 8517 Commerce Place Dr NE
Lacey, WA 98516
United States
Telephone: 1-253-333-8118
Website: www.systemthree.com
Email: support@systemthree.com

Emergency Contact
CHEMTEL (U.S. and CANADA) 1-800-704-9215
CHEMTEL (Outside the U.S.) – Call Collect accepted +1-360-256-7365

2. Hazard(s) Identification

Classification of substance or mixture/Signal Word
DANGER
Serious Eye damage/Eye Irritation – Category 1
Skin Sensitization – Category 1
Germ Cell Mutagenicity – Category 2
Specific Target Organ Toxicity (Repeated Exposure) [Oral] – Category 2

GHS Label Elements
Hazard Pictograms

Hazard Statements/Classification of substance or mixture
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe vapor.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
### Response

- **P308 + P313**: IF exposed or concerned: Get medical advice/attention.
- **P333 + P313**: IF skin irritation or rash occurs: Get medical attention.
- **P305 + P351 + P338 + P310**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
- **P314**: Get medical attention if you feel unwell.
- **P305**: Store locked up.

### Disposal
- **P501**: Dispose of contents in accordance with local, regional, national and international regulations.

### Hazards not otherwise classified (HNOC)
None known.

### 3. Composition/Information On Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentaerythritol-tris(1-(aziridinyl) propionate)</td>
<td>64265-57-2</td>
<td>50 - 60 %</td>
</tr>
<tr>
<td>Diethylene glycol monoethyl ether acetate</td>
<td>112-15-2</td>
<td>20 - 30%</td>
</tr>
</tbody>
</table>

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

### 4. First-Aid Measures

**Skin contact**
Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Eye contact**
Get medical attention immediately. Call poison control center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

**Ingestion**
Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Inhalation**
Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, of if breathing is irregular, provided artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth to mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

*Indication of immediate medical attention and special treatment needed, if necessary*
Notes to physician

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

Specific treatments

No specific treatment.

5. Fire-Fighting Measures

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>All extinguishing media are suitable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>None known.</td>
</tr>
<tr>
<td>Specific hazards arising from the chemical</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Decomposition products may include the following materials: Carbon dioxide Carbon monoxide Nitrogen oxides Aldehydes Organic acids</td>
</tr>
<tr>
<td>Special protective actions for fire-fighters</td>
<td>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.</td>
</tr>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>Further information</td>
<td>No other information.</td>
</tr>
</tbody>
</table>

6. Accidental Release Measures

| Personal precautions | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear properly fitted NIOSH certified respirator when ventilation is inadequate. Wear the appropriate personal protective equipment. |
| Emergency procedures | If specialized clothing is required to deal with the spillage, take note of any information in section 8 on suitable and unsuitable materials. See also information in “For non-emergency personnel”. |
| Methods and materials for containment/cleanup | 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. |
| 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). |

7. Handling and Storage

| 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.

**Precautions/Recommendations for safe/proper storage**
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.

**8. Exposure Controls/Personal Protection**

**Occupational Exposure Limits**
None established.

**Appropriate engineering controls**
If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Environmental exposure controls**
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures/Personal protective equipment**

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

**Hand protection**
Always wear impervious gloves, neoprene, vinyl or rubber.

**Skin protection**
Wear clean, body-covering clothing to avoid skin contact.

**Respiratory protection**
Use a 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.

**Special instructions for protection and hygiene**
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. 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.

**9. Physical and Chemical Properties**

**Chemical family**
Polyaziridine solution

**Appearance**
Aqueous solution

**Physical State**
Aqueous solution

**Form**
Liquid

**Color**
Light yellow

**Odor**
Mild

**Density (Specific Gravity)**
9.43 lb/gal (1.12 g/ cm³)

**Viscosity**
25 cps @ 25°C
pH 8 – 8.5

Melting point/freezing point Data not available
Initial boiling point and boiling range Data not available
Flash point Data not available
Evaporation rate Data not available
Flammability (solid, gas) Data not available
Upper/lower flammability limit (by volume) Data not available
  Upper flammability limit (by volume) Data not available
  Lower flammability limit (by volume) Data not available
Material VOC ≤370 grams/liter
Vapor density Heavier than air
Relative density Not determined
Solubility in water Data not available
Partition coefficient: n-octanol/water Data not available
Auto-ignition temperature Data not available
Decomposition temperature Data not available

10. Stability and Reactivity

Reactivity No specific data.
Chemical Stability Stable.
Possibility of hazardous reactions Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid No specific data.
Incompatible materials Acids, strong oxidizing materials.
Hazardous decomposition products No specific data.
Other hazards None known.

11. Toxicological Information

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Pentaerythritol-tris(1-(aziridinyl) propionate)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>11,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol monoethyl ether acetate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Guinea pig</td>
<td>3,930 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>4,400 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Result</th>
<th>Species</th>
<th>Test</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentaerythritol-tris(1-(aziridinyl) propionate)</td>
<td>Skin – Erythema/Eschar</td>
<td>Rabbit</td>
<td>-</td>
<td>4 h</td>
</tr>
<tr>
<td></td>
<td>Eyes – Cornea opacity</td>
<td>Rabbit</td>
<td>-</td>
<td>24 – 72 h</td>
</tr>
<tr>
<td>Component</td>
<td>Category</td>
<td>Route of exposure</td>
<td>Target organs</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>----------</td>
<td>-------------------</td>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>Pentaerythritol-tris(1-aziridinyl) propionate</td>
<td>Category 2</td>
<td>Oral</td>
<td>Not determined</td>
<td></td>
</tr>
</tbody>
</table>

### 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.

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

### Component

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

### Potential acute health effects

#### Eye Contact
Causes serious eye damage.

#### Inhalation
May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

#### Skin Contact
May cause an allergic skin reaction.

#### Ingestion
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
- Watering
- Redness

#### Inhalation
No data available.

#### Skin Contact
Adverse symptoms may include the following:
- Pain or Irritation
- Redness
- Blistering

#### Ingestion
Adverse symptoms may include the following:
- Stomach pains

### Delayed and immediate effects and also chronic effects from short and long term exposure
No information on product itself.

### Potential chronic health effects
No information on product itself.

### General
May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity
No significant effects or critical hazards.

Mutagenicity
Component suspected of causing genetic defects.

Teratogenicity
May damage the unborn child.

Developmental effects
No significant effects or critical hazards.

Fertility effects
No significant effects or critical hazards.

Numerical measures of toxicity
Data not available.

Acute toxicity estimates (ATEmix)

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>N/A</td>
</tr>
<tr>
<td>Dermal</td>
<td>N/A</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

12. Ecological Information

Ecotoxicity
No information on product itself.

<table>
<thead>
<tr>
<th>Component</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentaeerythritol-tris(1- (aziridinyl) propionate)</td>
<td>Acute EC50 3.8 mg/m</td>
<td>Algae</td>
<td>72 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 5.5 mg/l</td>
<td>Algae</td>
<td>72 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 81 mg/l</td>
<td>Daphnia-</td>
<td>48 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>Daphnia Magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 &gt;1000 mg/l</td>
<td>Micro organism</td>
<td>3 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 &gt;100 mg/l</td>
<td>Fish-</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>Cyprinus carpio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute NOEC .92 mg/l</td>
<td>Algae</td>
<td>72 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute NOEC .92 mg/l</td>
<td>Algae</td>
<td>72 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 22 mg/l</td>
<td>Daphnia-</td>
<td>48 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>Daphnia Magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 100 mg/l</td>
<td>Fish-</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>Cyprinus carpio</td>
<td></td>
</tr>
</tbody>
</table>

Acute LC50 10,000 mg/l Fathead minnow 96 h

Persistence and degradability
No information on product itself.

<table>
<thead>
<tr>
<th>Component</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentaeerythritol-tris(1- (aziridinyl) propionate)</td>
<td>OECD 301B Ready Biodegradability- CO₂ Evolution Test</td>
<td>29 days</td>
<td>1%</td>
</tr>
</tbody>
</table>

Bioaccumulative Potential
No information on product itself.

<table>
<thead>
<tr>
<th>Component</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentaeerythritol-tris(1- (aziridinyl) propionate)</td>
<td>-1.4</td>
<td>-</td>
<td>Low</td>
</tr>
<tr>
<td>Diethylene glycol monoethyl ether acetate</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Mobility in Soil
No information on product itself.

Soil/water partition coefficient (KOC)
Not available.

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 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.

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.

<table>
<thead>
<tr>
<th>International Transport Regulations</th>
<th>UN/NA number</th>
<th>Proper Shipping Name</th>
<th>Classes/*PG</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td></td>
<td>Not regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG</td>
<td></td>
<td>Not regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td></td>
<td>Not regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IATA</td>
<td></td>
<td>Not regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*PG: Packing group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)
None known.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aziridine, 2-methyl-</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Pennsylvania – RTK

None known.

California Prop. 65

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

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>Cancer</th>
<th>Reproductive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-methylaziridine</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

EPA SARA 302 Extremely Hazardous Substances

None known.
**EPA SARA 302/304/311/312 Hazardous Chemicals**
None known.

**SARA 313**
None.

**Form R – Reporting requirements**
None.

**CERCLA Hazardous substances**
None.

**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**

**HMIS Rating**

- **Health 3**
- **Flammability 1**
- **Physical Hazard 0**

**Date of Preparation**
January 13, 2020

**Date of Last Revision**
September 27, 2019

**Revision #**
4.0

**More Information**
1-253-333-8118

**Prepared by**
System Three Resins Inc.

The information contained herein is based on the data available to us and is believed to be correct. However, System Three Resins, Inc. makes no warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use thereof. System Three assumes no responsibility for injury from the use of the product described herein.