SAFETY DATA SHEET

1. Product Identification

**Product name**
T-88 Resin, Part A

**SDS Number**
1100A000

**Product type**
Epoxy polymer mixture

**Recommended use of the chemical and restrictions on use**
Directed at, but not limited to, the adhesion of similar and dissimilar substrates.

**Restrictions**
None known.

**Manufacturer/Supplier information**

- **Company name**: SYSTEM THREE RESINS, INC.
- **Address**: 8517 Commerce Place Dr NE
  Lacey, WA 98516
  United States
- **Telephone**: 1-253-333-8118
- **Website**: www.systemthree.com
- **Email**: support@systemthree.com
- **Emergency Contact**: CHEMTREC (U.S. and CANADA) 1-800-424-9300
  CHEMTREC (Outside the U.S.) 1-703-527-0585

2. Hazard(s) Identification

<table>
<thead>
<tr>
<th>Classification of substance or mixture/Signal Word</th>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corrosion/Irritation - Category 2</td>
<td></td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation - Category 2</td>
<td></td>
</tr>
<tr>
<td>Skin Sensitization - Category 1</td>
<td></td>
</tr>
<tr>
<td>Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3</td>
<td></td>
</tr>
</tbody>
</table>

**GHS Label Elements**

**Hazard Pictograms**

<table>
<thead>
<tr>
<th>Hazard Statements/Classification of substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315 Causes skin irritation.</td>
</tr>
<tr>
<td>H317 May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H319 Causes serious eye irritation.</td>
</tr>
<tr>
<td>H335 May cause respiratory irritation.</td>
</tr>
</tbody>
</table>

**Precautionary statements**

**Precautionary Statements Prevention**

- **P280**: Wear protective gloves. Wear eye or face protection.
- **P201**: Obtain special instructions before use.
- **P271**: Use only outdoors or in a well-ventilated area.
- **P264**: Wash hands thoroughly after handling.

**Response**

- **P304 + 340**: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- **P313**: Call a POISON CENTER or doctor/physician if you feel unwell.
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
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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diglycidyl Ether of Bisphenol A</td>
<td>25068-38-6</td>
<td>90-100%</td>
</tr>
<tr>
<td>Diglycidyl Ether of Bisphenol F</td>
<td>28064-14-4</td>
<td>1-10%</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
Remove contaminated clothing and shoes and wipe excess off skin. Flush skin with water. Follow by washing in soap and water. If irritation occurs, seek medical attention. Do not reuse clothing until cleaned. Contaminated leather articles (shoes) cannot be decontaminated and should be destroyed.

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

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

Inhalation
Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

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

Notes to physician
Treat symptoms as they appear. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments
No specific treatment.

5. Fire-Fighting Measures

Suitable extinguishing media
Alcohol-resistant foam.
Carbon dioxide (CO₂).
Dry chemical
Water Fog

Unsuitable extinguishing media
None known.

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

Hazardous decomposition products
Decomposition products may include the following materials:
Carbon dioxide
Carbon monoxide

Special protective actions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for firefighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Further information

Do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. Accidental Release Measures

Personal precautions

Wear proper personal protective equipment (PPE). Avoid direct contact with material. Proper PPE includes: disposable gloves, eye protection and skin protection.

Emergency procedures

If materials is spilled, avoid contact with material. Persons not wearing appropriate protective equipment should leave the area of the spill until cleanup is complete.

Methods and materials for containment/cleanup

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

Environmental precautions

Avoid dispersal of spilled material, contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).

7. Handling and Storage

Precautions for safe handling

Put on appropriate personal protective equipment. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid contact with skin and eyes. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. When using, do not eat, drink or smoke. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Precautions/Recommendations for safe/proper storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

None established.

Appropriate engineering controls

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

Environmental exposure controls

Use appropriate containment to avoid environmental contamination. Do not allow spill to enter sewers or waterways.
Individual protection measures/Personal protective equipment

Eye/face protection
- Splash-proof goggles or safety spectacles with side shields are recommended. Always wear eye protection when sanding cured epoxy resins to avoid dust in eyes.

Hand protection
- Always wear impervious gloves: butyl rubber, nitrile rubber, Neoprene, PVC disposable gloves,

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

Respiratory protection
- Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Special instructions for protection and hygiene
- Wear gloves at all times when handling product, avoid direct contact with skin. When finished using product, dispose of gloves properly and wash hands with warm, soapy water.

9. Physical and Chemical Properties

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

**Reactivity**
None

**Chemical Stability**
Stable under normal conditions.

**Possibility of hazardous reactions**
Hazardous polymerization will not occur.

**Conditions to avoid**
Epoxy resins and epoxy resin hardeners react with each other producing heat. They should not be mixed with each other under uncontrolled conditions or in large mass as the ensuing exotherm may result in heat and smoke, resulting in hazardous decomposition products.

**Incompatible materials**
Strong oxidizing agents, Lewis and mineral acids.

**Hazardous decomposition products**
Oxides of carbon, aldehydes, acids.

**Other hazards**
None known.

11. Toxicological Information

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diglycidyl Ether of Bisphenol A</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>11,400 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>2,000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion (components)**

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diglycidyl Ether of Bisphenol A</td>
<td>Category 3</td>
<td></td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Diglycidyl Ether of Bisphenol F</td>
<td>Category 3</td>
<td></td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity (repeated exposure)**
Not available.
Aspiration hazard  
Not available.

Potential acute health effects

**Eye Contact**  
Causes serious eye irritation.

**Inhalation**  
May cause respiratory irritation.

**Skin Contact**  
Causes skin irritation. May cause an allergic skin reaction.

**Ingestion**  
Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

**Eye Contact**  
Adverse symptoms may include the following:
- Pain or irritation
- Watering
- Redness

**Inhalation**  
Adverse symptoms may include the following:
- Respiratory tract irritation
- Coughing

**Skin Contact**  
Adverse symptoms may include the following:
- Irritation
- Redness

**Ingestion**  
No specific data.

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

Potential chronic health effects

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

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

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

**Teratogenicity**  
No known significant effects or critical hazards.

**Developmental effects**  
No known significant effects or critical hazards.

**Fertility effects**  
No known significant effects or critical hazards.

12. Ecological Information

Ecotoxicity  
No information on product itself.

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

Persistence and degradability  
No information on product itself.

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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diglycidyl Ether of Bisphenol A</td>
<td>Diglycidyl Ether of Bisphenol F</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------</td>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.64 – 3.78</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 31.00</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>low</td>
<td>low</td>
<td></td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Regulatory information</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>Non-regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG</td>
<td></td>
<td>Non-regulated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td>UN3082</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL-A EPICHLOROHYDRIN RESIN)</td>
<td>Class 9 III</td>
<td></td>
</tr>
<tr>
<td>IATA</td>
<td>UN3082</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL-A EPICHLOROHYDRIN RESIN)</td>
<td>Class 9 III</td>
<td></td>
</tr>
</tbody>
</table>

*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.
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.

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxirane, 2-(phenoxymethyl)-</td>
<td>Yes</td>
<td>No</td>
<td>5 µg/day</td>
<td>No</td>
</tr>
<tr>
<td>Oxirane, 2-(chloromethyl)-</td>
<td>Yes</td>
<td>Yes</td>
<td>9 µg/day</td>
<td>No</td>
</tr>
<tr>
<td>EPA SARA 302 Extremely Hazardous Substances</td>
<td>None required.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPA SARA 302/304/311/312 Hazardous Chemicals</td>
<td>Acute Health Hazard.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States inventory (TSCA 8b)</td>
<td>All components are listed or exempted.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CANADA

WHMIS (Canada) Class D-2B: Material causing other toxic effects (Toxic).
Canadian NPRI None Required
CEPA Toxic substances None Required

INTERNATIONAL REGULATIONS

International Lists
Australia inventory (AICS): All components are listed or exempted.
Canada inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Japan inventory: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
New Zealand inventory (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): All components are listed or exempted.

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

HMIS Rating

Health  2
Flammability  1
Physical Hazard  0

Date of Preparation September 27, 2019
Date of Last Revision February 13, 2017
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.