

**1. Product Identification**

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<b>Product name</b>	G2 Glue Hardener, Part B
<b>SDS Number</b>	F1110B00
<b>Product type</b>	Epoxy polymer mixture.
<b>Recommended use of the chemical and restrictions on use</b>	Directed at, but not limited to, the bonding of similar and dissimilar substrates.
<b>Restrictions</b>	None known.
<b>Manufacturer/Supplier information</b>	
<b>Company name</b>	SYSTEM THREE RESINS, INC.
<b>Address</b>	3500 W. Valley Hwy, Suite Suite 105 Auburn, WA 98001-2436 United States
<b>Telephone</b>	1-253-333-8118
<b>Website</b>	www.systemthree.com
<b>Email</b>	support-08@systemthree.com
<b>Emergency Contact</b>	CHEMTREC (U.S. and CANADA) 1-800-424-9300 CHEMTREC (Outside the U.S.) 1-703-527-0585

**2. Hazard(s) Identification**

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<b>Classification of substance or mixture/Signal Word</b>	DANGER. Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Eye Irritation - Category 2 Respiratory Sensitization – Category 1 Skin Sensitization – Category 1 Reproductive Toxicity – Category 2 Specific Target Organ Toxicity (Single Exposure) [eyes] – Category 1 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3 Specific Target Organ Toxicity (Repeated Exposure) [skin, respiratory tract, kidneys, liver] – Category 1
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**GHS Label Elements**  
Hazard Pictograms

<b>Hazard Statements/Classification of substance or mixture</b>	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation.
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H361 Suspected of damaging fertility or the unborn child.  
 H370 Causes damage to organs: (eyes)  
 H372 Causes damage to organs through prolonged or repeated exposure:  
 (skin, respiratory tract, kidneys, liver)

**Precautionary statements**

**Precautionary Statements**  
**Prevention**

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P260 Do not breathe vapor.  
 P264 Wash hands thoroughly after handling.  
 P270 Do not eat, drink, or smoke when using this product.  
 P271 Use only outdoors or in well-ventilated area.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P280 Wear protective gloves. Wear eye or face protection.  
 P285 In case of inadequate ventilation wear respiratory protection.  
 P314 Get medical attention if you feel unwell.  
 P308 + P311 If exposed or concerned: Call a POISON CENTER or physician.  
 P405 Store locked up.  
 P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Response**

**Storage**

**Disposal**

**Hazards not otherwise classified (HNOC)**

None Available.

**3. Composition/Information On Ingredients**

Chemical Name	CAS Number	Content (%)
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	68410-23-1	90 – 100%
Triethylenetetramine	112-24-3	7 – 10%

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

**4. First-Aid Measures**

**Skin contact**

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse.

**Eye contact**

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

**Ingestion**

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention

immediately. Maintain an open airway. Loosen tight clothing such as collar, tie, belt, or waistband.

**Inhalation**

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

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

**Notes to physician**

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

**Specific treatments**

Treat symptoms as they appear.

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## 5. Fire-Fighting Measures

**Suitable extinguishing media**

Foam, carbon dioxide, dry chemical, water fog.

**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.

**Hazardous decomposition products**

Carbon oxides, nitrogen oxides.

**Special protective actions for fire-fighters**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**

Full fire suit and self-contained breathing apparatus.

**Further information**

None known.

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## 6. Accidental Release Measures

**Personal precautions**

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

**Emergency procedures**

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

**Methods and materials for containment/cleanup**

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

**Environmental precautions**

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

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## 7. Handling and Storage

**Precautions for safe handling**

Always wear protective, disposable gloves when handling epoxy products to prevent exposure. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

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

Store epoxy 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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### Occupational Exposure Limits

Triethylenetetramine

**AIHA WEEL (1999-01-01)**

Time Weighted Average (TWA) 1 ppm

**NIOSH REL (2005-09-30)**

### Appropriate engineering controls

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

### Environmental exposure controls

Use appropriate containment to avoid environmental contamination. Do not allow spill to enter sewers or waterways.

### Individual protection measures/Personal protective equipment

#### Eye/face protection

Splash proof goggles or safety glasses with side shields are recommended. Always wear eye protection when sanding cured epoxy to avoid dust in eyes.

#### Hand protection

Always wear impervious gloves, neoprene, vinyl or rubber.

#### Skin protection

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

#### Respiratory protection

Use a NIOSH-approved respiratory device when sanding cured epoxy to prevent dust in lungs.

#### Special instructions for protection and hygiene

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

## 9. Physical and Chemical Properties

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### Chemical family

Polyamide curing agent

### Appearance

Viscous liquid

### Physical State

Epoxy polymer mixture

#### Form

Liquid

#### Color

Reddish-brown

#### Odor

Characteristic

### Density

970 kg/m<sup>3</sup> (8.09 lb/gal)

### Viscosity

13,000 CPS @ 25°C (77°F)

### pH

N/A

### Melting point/freezing point

Data not available

### Initial boiling point and boiling range

Data not available

### Flash point

Open cup: >110°C (230°F), ASTM D 4206

### Evaporation rate

Data not available

### Flammability (solid, gas)

Data not available

### Upper/lower flammability limit (by volume)

#### Upper flammability limit (by volume)

N/A

#### Lower flammability limit (by volume)

N/A

### Material VOC

None

Vapor density	1 [Air=1]
Relative density	Not determined
Solubility in water	Slightly
Partition coefficient: n-octanol/water	Data not available
Auto-ignition temperature	Data not available
Decomposition temperature	Data not available

## 10. Stability and Reactivity

Reactivity	Stable under normal conditions.
Chemical Stability	Stable
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Avoid exposure – obtain special instructions before use. Avoid all possible sources of ignition (spark or flame).
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Under normal conditions or storage and use, hazardous decomposition products should not be produced.
Other hazards	Heating this substance above 300°F in the presence of air may cause slow oxidative decomposition; above 500°F polymerization may occur. Some combinations of resins and curing agents can produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from the thermal and chemical decompositions vary widely in composition and toxicity.

## 11. Toxicological Information

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

Component	Result	Species	Dose	Exposure
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	LD50 Oral	Rat	>5,000 mg/kg	-
Triethylenetetramine	LD50 Oral	Rat	2,500 mg/kg	-

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

Component	Result	Species	Score	Exposure
Triethylenetetramine	Eyes – Moderate irritant	Rabbit		24 hrs
	Skin – Severe irritant	Rabbit		24 hrs
	Eyes – Severe irritant	Rabbit		

**Sensitization** No information on product itself.

**Mutagenicity** No information on product itself.

**Carcinogenicity** No information on product itself.

**Reproductive Toxicity** No information on product itself.

**Teratogenicity** No information on product itself.

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

No information on product itself.

Component	Category	Route of exposure	Target organs
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	Category 3		Respiratory tract irritation
Triethylenetetramine	Category 1		Eyes

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

No information on product itself.

Component	Category	Route of exposure	Target organs
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	Category 2		Skin
Triethylenetetramine	Category 1 Category 2		Respiratory tract Skin Liver Kidneys

**Aspiration hazard**

No information on product itself.

**Potential acute health effects**

**Eye Contact**

Causes serious eye irritation.

**Inhalation**

May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**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
- Wheezing and breathing difficulties
- Asthma
- Reduced fetal weight
- Increase in fetal deaths
- Skeletal malformations

**Skin Contact**

Adverse symptoms may include the following:

- Irritation
- Redness
- Reduced fetal weight
- Increase in fetal deaths
- Skeletal malformations

**Ingestion**

Adverse symptoms may include the following:

- Reduced fetal weight
- Increase in fetal deaths
- Skeletal malformations

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

**Potential chronic health effects**

<b>General</b>	Causes damage to organs through prolonged or repeated exposure: 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>	Suspected of damaging the unborn child.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	Suspected of damaging fertility.

**Numerical measures of toxicity**

**Acute toxicity estimates (ATEmix)** Not available.

Route	ATE value
Oral	N/A
Dermal	N/A
Inhalation (vapors)	N/A

## 12. Ecological Information

**Ecotoxicity**

Component	Result	Species	Exposure
Triethylenetetramine	Acute LC50 – 33,900 µg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute EC50 – 3,700 µg/l Fresh water	Aquatic plants – Green algae	96 h

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

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

Component	LogPow	BCF	Potential
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines		492.00	Low
Triethylenetetramine	-1.66 - -1.4	-	low

**Mobility in Soil**

**Soil/water partition coefficient (KOC)** No information on product itself.

**Other adverse effects** No known significant effects or critical hazards.

## 13. Disposal Considerations

**Waste from residues/ unused products** The generation of waste should be avoided or minimized wherever possible. Product should not be allowed to enter drains, water courses or the soil; dispose of this material and its containers in a safe way. Contact supplier if guidance is required.

**Contaminated packaging**

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

## 14. Transport Information

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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		Not regulated		
TDG		Not regulated		
IMO/IMDG		Not regulated		
IATA (Cargo)		Not regulated		
*PG: Packing group				
<b>Special precautions for user:</b>		Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.		

## 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.

#### California Prop. 65

None required.

#### EPA SARA 302 Extremely Hazardous Substances

None required.

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

None required.

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

All components are listed or exempted.

### CANADA

#### WHMIS (Canada)

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

#### Canadian NPRI

None required.

#### CEPA Toxic substances

None required.

### INTERNATIONAL REGULATIONS

#### International Lists

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



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

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### HMIS Rating

Health	2
Flammability	1
Physical Hazard	0

<b>Date of Preparation</b>	December 21, 2016
<b>Date of Last Revision</b>	
<b>Revision #</b>	1.0
<b>More Information</b>	1-253-333-8118
<b>Prepared by</b>	N. Kim, System Three Resins Inc.

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