

1. Product Identification

Product name	G2 Glue Resin, Part A
SDS Number	F1110A00
Product type	Epoxy polymer mixture.
Recommended use of the chemical and restrictions on use	Directed at, but not limited to, the bonding of similar and dissimilar substrates.
Restrictions	None known.
Manufacturer/Supplier information	
Company name	SYSTEM THREE RESINS, INC.
Address	3500 W. Valley Hwy, Suite Suite 105 Auburn, WA 98001-2436 United States
Telephone	1-253-333-8118
Website	www.systemthree.com
Email	support-08@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

Classification of substance or mixture/Signal Word	WARNING. Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Eye Irritation - Category 2 Skin Sensitizer – Category 1 Reproductive Toxicity – Category 2 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3 Acute Aquatic Toxicity – Category 2 Chronic Aquatic Toxicity – Category 2
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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. H355 May cause respiratory irritation. H361 Suspected of damaging fertility or the unborn child. H401 Toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects
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Precautionary statements

Precautionary Statements

Prevention

P280 Wear protective gloves. Wear eye or face protection.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing vapors.

P308 + P313 If exposed or concerned: Get medical attention.

Response

Storage

P401 Store above 32 °F / 0 °C

Disposal

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

Hazards not otherwise classified (HNOC)

None Available.

3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Diglycidyl Ether of Bisphenol A	25068-38-6	80 – 90 %
Benzyl Alcohol	100-51-6	6-10 %
Para-tert-Butylphenol	98-54-4	6-10%
Diglycidyl Ether of Bisphenol F	28064-14-4	6-10%

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

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 or 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

Burns. Irritation. Pre-existing skin conditions may be aggravated by prolonged or repeated contact. Persons with sensitive airways (e.g., asthmatics) may be sensitive to vapors.

Specific treatments

Treat symptoms as they appear.

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

Potential skin irritation.

Hazardous decomposition products

None known.

Special protective actions for fire-fighters	When fighting chemical fires, wear full protective equipment with self-contained breathing apparatus. Water spray may be used to cool fire-exposed containers. Toxic fumes may be evolved when this substance is burned.
Special protective equipment for fire-fighters	Full fire suit and self-contained breathing apparatus.
Further information	Water spray may be used to cool fire-exposed containers. Toxic fumes may be evolved when this substance is burned. Epoxy in mass can create exotherm.

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	Skin sensitizer, harmful to aquatic life.

7. Handling and Storage

Precautions for safe handling	Always wear protective, disposable gloves when handling epoxy products to prevent exposure.
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

Occupational Exposure Limits	None established.
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

Chemical family	Epoxy Resin
Appearance	Clear viscous liquid
Physical State	Epoxy polymer mixture
Form	Liquid
Color	Water clear
Odor	Phenolic odor
Density (Specific Gravity)	9.5 lb/gal (1.14)
Viscosity	2000-2200 cps @ 25°C
pH	N/A
Melting point/freezing point	Data not available
Initial boiling point and boiling range	Data not available
Flash point	>300°F, Pensky-Martens Closed Cup
Evaporation rate	Slower than ether
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	Heavier than air
Relative density	Not determined
Solubility in water	Negligible, in water
Partition coefficient: n-octanol/water	Data not available
Auto-ignition temperature	300°C (572.00°F)
Decomposition temperature	Not available

10. Stability and Reactivity

Reactivity	None
Chemical Stability	Stable
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Epoxy resins and epoxy resin hardeners can 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.

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	-
Benzyl Alcohol	LD50 Oral	Rat	1620 mg/kg	-
	LC50 Inhalation	Rat	>4178 mg/m3	4 hrs, aerosol
Para-tert-Butylphenol	LD50 Oral	Rat	>2000 mg/kg	-
	LC50 Inhalation	Rat	5.6 mg/l	-

Irritation/Corrosion (components)

No information on product itself.

Component	Result	Species	Test	Exposure
Diglycidyl Ether of Bisphenol A	Skin – Erythema/Eschar 404 Acute Dermal Irritation/Corrosion	Rabbit	1.5 – 2	-
	Skin – Edema 404 Acute Dermal Irritation/Corrosion	Rabbit	1.0 – 1.5	-
	Eyes – 405 Acute Eye Irritation/Corrosion	Rabbit	0	-
	Eyes – Redness of the conjunctivae	Rabbit	0.7	-
	Skin – Moderate irritant	Rabbit		24 hrs
	Eyes – Mild irritant	Rabbit		-
Benzyl Alcohol	Eyes – 405 OECD Irritant	Rabbit		-
Para-tert-Butylphenol	Skin – Moderate irritant	Rabbit		4 hrs
	Eyes – Severe eye irritant	Rabbit		24 hrs

Sensitization

No information on product itself.

Mutagenicity

No information on product itself.

Carcinogenicity

No information on product itself.

Reproductive Toxicity

No information on product itself.

Teratogenicity

No information on product itself.

Specific target organ toxicity (single exposure)

No information on product itself.

Component	Category	Route of exposure	Target organs
Diglycidyl Ether of Bisphenol A	Category 3		Respiratory tract irritation
Diglycidyl Ether of Bisphenol F	Category 3		Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

No information on product itself.

Aspiration hazard

No information on product itself.

Potential acute health effects

Eye Contact

Causes serious eye irritation.

Inhalation

May cause respiratory irritation.

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

Ingestion Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye Contact Adverse symptoms may include the following:
Pain
Watering
Redness

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

Skin Contact Adverse symptoms may include the following:
Irritation
Redness

Ingestion No specific data.

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

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)

Route	ATE value
Oral	8074.3 mg/kg
Dermal	2020.2 mg/kg
Inhalation (vapors)	4178 mg/l

12. Ecological Information

Ecotoxicity

Component	Result	Species	Exposure
Diglycidyl Ether of Bisphenol A	Acute LC50 1.3 mg/l – 203 Fish, Acute Toxicity Test	Fish – Fish	96 h
	Acute EC50 2.1 mg/l – 202 Daphnia sp. Acute Immobilization Test and Reproduction Test	Aquatic invertebrates. Water flea	48 h
	Acute NOEC 0.3 mg/l – 211 Daphnia Magna Reproduction Test	Aquatic invertebrates. Water flea	21 d
	Acute LC50 > 11 mg/l	Aquatic plants – Algae	72 h
Benzyl Alcohol	Acute LC50 460 mg/l	Fish	96 h

	Acute EC50 230 mg/l	Invertebrates	48 h
	Chronic NOEC 310 mg/l	Algae	72 h
Para-tert-Butylphenol	Acute LC50 – 5.14 mg/l	Fish	96 h
	Acute EC50 – 4.8 mg/l	Daphnia	48 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	2.64 – 3.78	3 – 31 31.00	Low
Diglycidyl Ether of Bisphenol F	3	-	low
Benzyl Alcohol	1.05	1.37 (calculated)	-

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 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		Not regulated		
TDG		Not regulated		
IMO/IMDG	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIQUID EPOXY RESIN)	Class 9 III	Marine pollutant
IATA (Cargo)	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIQUID EPOXY RESIN)	Class 9 III	Marine pollutant

*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.

Ingredient Name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Oxirane, 2-(phenoxymethyl)-	Yes	No	5 µg/day	No
Oxirane, 2-(chloromethyl)-	Yes	Yes	9 µg/day	No

EPA SARA 302 Extremely Hazardous Substances

None required.

EPA SARA 302/304/311/312 Hazardous Chemicals

Acute Health Hazard.

United States inventory (TSCA 8b)

All components are listed or exempted.

CANADA

WHMIS (Canada)

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

Canadian NPRI

None required.

CEPA Toxic substances

None required.

INTERNATIONAL REGULATIONS

International Lists

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

Canada inventory: All components are listed or exempted.

Korea inventory: All components are listed or exempted.

Japan inventory: All components are listed or exempted.

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

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

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

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

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

HMIS Rating

Health 2
Flammability 1
Physical Hazard 0

Date of Preparation

November 23, 2016

Date of Last Revision

Revision #

1.0

More Information

1-253-333-8118

Prepared by

J. Bartlett, 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

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

Classification of substance or mixture/Signal Word	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



Hazard Statements/Classification of substance or mixture	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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SAFETY DATA SHEET

1. Product Identification

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

Classification of substance or mixture/Signal Word	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



Hazard Statements/Classification of substance or mixture	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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	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.
<u>Indication of immediate medical attention and special treatment needed, if necessary</u>	
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.

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.

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).

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

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

Chemical family	Polyamide curing agent
Appearance	Viscous liquid
Physical State	Epoxy polymer mixture
Form	Liquid
Color	Reddish-brown
Odor	Characteristic
Density	970 kg/m ³ (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

General	Causes 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 known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	Suspected of damaging the unborn child.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates (ATE_{mix}) 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.
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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		Not regulated		
TDG		Not regulated		
IMO/IMDG		Not regulated		
IATA (Cargo)		Not 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

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 CEPA Toxic substances

None required.

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.