

**1. Product Identification**

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<b>Product name</b>	SilverTip Fast Hardener, Part B
<b>SDS Number</b>	0900B
<b>Product type</b>	Amine curing agent.
<b>Recommended use of the chemical and restrictions on use</b>	Directed at, but not limited to, the laminating and coating of composite materials, wood, and inorganic 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 Acute Toxicity: Oral – Category 4 Acute Toxicity: Inhalation – Category 4 Skin Corrosion/Irritation – Category 1 Serious Eye Damage/Eye Irritation – Category 1 Skin Sensitization – Category 1 Reproductive Toxicity – Category 1 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3 Aquatic Hazard (Acute) – Category 1 Aquatic Hazard (Long-term) – Category 1
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**GHS Label Elements****Hazard Pictograms**

<b>Hazard Statements/Classification of substance or mixture</b>	H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H332 Harmful if inhaled. H335 May cause respiratory irritation. H360 May damage fertility or the unborn child.
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H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

### Precautionary statements

#### Precautionary Statements

##### Prevention

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing vapor.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.

##### Response

P273 Avoid release to the environment.  
P280 Wear protective gloves. Wear eye or face protection.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

##### Storage

P362 + P364 Take off contaminated clothing and wash it before reuse.  
P405 Store locked up.

##### Disposal

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

Hazards not otherwise classified (HNOC)

None known.

### 3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Isophorone Diamine	2855-13-2	60 – 70%
p-tert-Butylphenol	98-54-4	5 – 10%
Benzyl Alcohol	100-51-6	15 – 20%
1,3-benzenedimethanamine	1477-55-0	5 – 10%
Nonyl Phenol	84852-15-3	5 – 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. 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 a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and

lower eyelids. Check for and remove contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

**Ingestion**

Do not induce vomiting without medical advice. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Prevent aspiration of vomit. Never give anything by mouth to an unconscious person.

**Inhalation**

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, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. 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.

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

**Notes to physician**

Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

**Specific treatments**

No specific treatment.

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## 5. Fire-Fighting Measures

**Suitable extinguishing media**

Alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>), 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. This material is toxic to aquatic life with long lasting effects. Fire water contaminated must be contained and prevented from being discharged to any waterway, sewer or drain.

**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 fire-fighters**

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

**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.

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## 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Wear proper protective clothing, gloves and eye/face protection.

**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.

**Methods and materials for containment/cleanup**

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal

contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

**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 or air).

## 7. Handling and Storage

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**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. Emergency showers and eye wash stations should be readily accessible. When using, do not eat, drink or smoke.

**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

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**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**

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. 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**

Discard contaminated leather articles. Remove contaminated clothing. Wash at the end of each work shift and before eating smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.

## 9. Physical and Chemical Properties

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<b>Chemical family</b>	Amine curing agent
<b>Appearance</b>	Clear liquid
<b>Physical State</b>	Amine mixture
<b>Form</b>	Liquid
<b>Color</b>	Colorless
<b>Odor</b>	Ammoniacal
<b>Density (Specific Gravity)</b>	0.9 – 1.0
<b>Viscosity</b>	525 CPS @77°F (25°C)
<b>pH</b>	N/A
<b>Melting point/freezing point</b>	N/A
<b>Initial boiling point and boiling range</b>	N/A
<b>Flash point</b>	N/A
<b>Evaporation rate</b>	Slower than ether
<b>Flammability (solid, gas)</b>	N/A
<b>Upper/lower flammability limit (by volume)</b>	N/A
<b>Material VOC</b>	None
<b>Vapor density</b>	Heavier than air
<b>Relative density</b>	N/A
<b>Solubility in water</b>	Negligible
<b>Partition coefficient: n-octanol/water</b>	N/A
<b>Auto-ignition temperature</b>	N/A
<b>Decomposition temperature</b>	N/A

## 10. Stability and Reactivity

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<b>Reactivity</b>	None.
<b>Chemical Stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	Do not freeze. Avoid exposure to air, moisture, ignition sources and elevated temperatures.
<b>Incompatible materials</b>	Reactive or incompatible with the following materials: Organic acids Mineral acids Sodium hypochlorite Oxidizing agents
<b>Hazardous decomposition products</b>	Carbon monoxide Carbon dioxide Nitrogen oxides
<b>Other hazards</b>	None known.

## 11. Toxicological Information

### Acute Health Hazard (components)

No comprehensive data (ingestion, inhalation, dermal) on mixture (product).

Component	Result	Species	Dose	Exposure
Isophorone Diamine	LD50 Oral	Rat	1,030 mg/kg	-
	LD50 Dermal	Rat	>2,000 mg/kg	-
	LC50 Inhalation	Rat	>5.01 mg/l	4 h
Nonyl Phenol	LD50 Dermal	Rabbit	2,031 mg/kg	-
	LD50 Oral	Rat	1,412 mg/kg	-
Benzyl Alcohol	LD50 Oral	Rat	1,620 mg/kg	-
	LC50 Inhalation	Rat	>4,178 mg/kg	4 h, aerosol
2-Methyl-1,5-pentamethylenediamine	LD50 Dermal	Rabbit	1870 mg/kg	-
	LD50 Oral	Rat	1170 mg/kg	-
	LC50 Inhalation	Rat	4.9 mg/l/1h	-
Para-tertiary-butylphenol	LD50 Dermal	Rabbit	2,520 mg/kg	-
	LD50 Oral	Rat	5,660 mg/kg	-
1,3-Benzenedimethanamine	LD50 Dermal	Rabbit	2,000 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-

### Irritation/Corrosion (components)

Classifies as corrosive per positive GHS calculation on additivity.

Component	Result	Species	Test	Exposure
Isophorone Diamine	Skin – Corrosive	Rabbit	OECD 404 Acute Dermal Irritation/Corrosion	-
	Eyes – Corrosive	Rabbit	OECD 405 Acute Eye Irritation/Corrosion	-
Benzyl Alcohol	Eye – Irritant	Rabbit	OECD 405 Acute Eye Irritation/Corrosion	-
Para-tertiary-butylphenol	Irritation	-	Skin	-
	Serious eye irritation	-	Eye	-

### Sensitization

No data is available on the product itself.

### Mutagenicity

No data is available on the product itself.

### Carcinogenicity

No data is available on the product itself.

### Reproductive Toxicity

No data is available on the product itself.

### Teratogenicity

No data is available on the product itself.

### Specific target organ toxicity (single exposure)

No data is available on the product itself.

Component	Category	Route of exposure	Target organs
2-Methyl-1,5-pentamethylenediamine	Category 3		Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

No data is available on the product itself.

### Aspiration hazard

No data is available on the product itself.

### Potential acute health effects

<b>Eye Contact</b>	Causes serious eye damage.
<b>Inhalation</b>	May cause respiratory irritation.
<b>Skin Contact</b>	Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
<b>Ingestion</b>	Harmful if swallowed. May cause burns to mouth, throat and stomach.

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

<b>Eye Contact</b>	Adverse symptoms may include the following: Pain or irritation Watering Redness
<b>Inhalation</b>	Adverse symptoms may include the following: Respiratory tract irritation Coughing
<b>Skin Contact</b>	Adverse symptoms may include the following: Pain or irritation Redness Blistering may occur
<b>Ingestion</b>	Adverse symptoms may include the following: Stomach pains

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

No data is available on the product itself.

**Potential chronic health effects**

<b>General</b>	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates (ATEmix)**

Route	ATE value
Oral	1614.6 mg/kg
Dermal	3194.6 mg/kg
Inhalation (vapors)	13.75 mg/l

## 12. Ecological Information

**Ecotoxicity**

No data is available on the product itself.

Component	Endpoint	Exposure	Species	Result
Isophorone Diamine	Acute LC50	96 h	Fish	110 mg/l
	Acute EC50	48 h	Daphnia magna	23 mg/l

	Acute EC50	72 h	Scenedesmus subspicatus	>50 mg/l
Nonyl Phenol	Acute EC50	3 h Static	Bacteria	950 mg/l
	Acute EC50	48 h Static	Daphnia	0.085 mg/l
	Acute LC50	96 h Static	Fish	0.05 mg/l
Benzyl Alcohol	Acute LC50	96 h	Fish	460 mg/l
	Acute EC50	48 h	Invertebrates	230 mg/l
	Chronic NOEC	21 d	Invertebrates	51 mg/l
	Acute EC50	72 h	Algae	770 mg/l
	Chronic NOEC	72 h	Algae	310 mg/l
2-Methyl-1,5-pentamethylenediamine	Acute EC50	72 h	Algae	>100 mg/l
	Acute EC50	48 h	Daphnia	19.8 mg/l
	-	-	Fish	1825 mg/l
Para-tertiary-butylphenol	LC50	96 h	Fish	5.14 mg/l
	EC50	48 h	Daphnia magna	4.8 mg/l
1,3-Benzenedimethanamine	LC50 OECD 203	96 h	Fish	87.6 mg/l
	EC50 OECD 202	48 h	Daphnia magna	15.2 mg/l
	NOEC OECD 211	21 d	Daphnia magna	4.7 mg/l

**Persistence and degradability** No data is available on the product itself.

Component	Test	Period	Result
Nonyl Phenol	OECD 301B Ready Biodegradability – CO2 Evolution Test	35 days	48.2%
Benzyl Alcohol	-	-	Readily biodegradable
1,3-Benzenedimethanamine	OECD 301B	28 d	49%

**Bioaccumulative Potential** No data is available on the product itself.

Component	LogPow	BCF	Potential
Nonyl Phenol	5.4	740	High
Benzyl Alcohol	1.05	1.37 (calculated)	-
Para-tertiary-butylphenol	3.31	-	-
1,3-Benzenedimethanamine	-	3.16 l/kg (calculated)	-

**Mobility in Soil** No data is available on the product itself.

**Soil/water partition coefficient (KOC)** No data is available on the 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

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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	UN2735	Amines, liquid, corrosive, n.o.s. (Isophorone diamine, para-tert-butylphenol)	Class 8 III	Marine pollutant
TDG	UN2735	Amines, liquid, corrosive, n.o.s. (Isophorone diamine, para-tert-butylphenol)	Class 8 III	Marine pollutant
IMO/IMDG	UN2735	Amines, liquid, corrosive, n.o.s. (Isophorone diamine, para-tert-butylphenol)	Class 8 III	Marine pollutant
IATA (Cargo)	UN2735	Amines, liquid, corrosive, n.o.s. (Isophorone diamine, para-tert-butylphenol)	Class 8 III	

\*PG: Packing group

### Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## 15. Regulatory Information

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### UNITED STATES

#### U.S. Federal Regulations

**United States – TSCA 12(b) – Chemical export notification:** None Required.  
**United States – TSCA 5(a)2 – Final significant new use rules:** Not Listed.  
**United States – TSCA 5(a)2 – Proposed significant new use rules:** Not Listed.  
**United States – TSCA 5(e) – Substance consent order:** Not listed.

#### Clean Air Act – Ozone Depleting Substances (ODS)

This product does not contain nor is it manufactured with ozone depleting substances.

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

Product Name	Concentration %
Phenol	0 – 1%

#### Pennsylvania – RTK

Phenol, 4-tert-Butylphenol

#### California Prop. 65

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

#### EPA SARA 302 Extremely Hazardous Substances

None required.

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

Acute Health Hazard, Chronic Health Hazard

#### SARA 313

#### Form R – Reporting requirements

Product Name	Concentration %
Phenol	0 – 1%

#### CERCLA Hazardous substances

Component	%	Section 304 CERCLA	CERCLA Reportable	Product Reportable

		Hazardous Substance	Quantity (Lbs)	Quantity (Lbs)
Phenol	1	Listed		

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

All components are listed or exempted.

**CANADA**

**WHMIS (Canada)**

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

**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.

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

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**HMIS Rating**

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

**Date of Preparation** June 13, 2017  
**Date of Last Revision** January 13, 2016  
**Revision #** 2.0  
**More Information** 1-253-333-8118  
**Prepared by** N. Kim, System Three Resins Inc.

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