

1. Product Identification

Product name	Jet Cure Hardener, Part B
SDS Number	F1010B00
Product type	Curing Agent
Recommended use of the chemical and restrictions on use	Directed at, but not limited to, the molding and coating of fiber composites, wood, and other surfaces.
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 ACUTE TOXICITY: ORAL – Category 4 ACUTE TOXICITY: DERMAL – Category 4 SKIN CORROSION/IRRITATION – Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1 SKIN SENSITIZATION – Category 1 TOXIC TO REPRODUCTION [Fertility] – Category 1 TOXIC TO REPRODUCTION [Unborn child] – Category 1 SINGLE TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] – Category 3 AQUATIC HAZARD (Acute) – Category 1 AQUATIC HAZARD (Chronic) – Category 1
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GHS Label Elements
Hazard Pictograms



Hazard Statements/Classification of substance or mixture	H302 Harmful if swallowed. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation.
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H360 May damage fertility or the unborn child.
 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.
 P260 Do not breathe dusts or mists.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 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.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P302 + P352 IF ON SKIN: Wash with soap and water.
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305 + P351 + P338 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.
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

Storage

P391 Collect spillage.
 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 (%)
Nonyl Phenol	84852-15-3	50 – 60%
Aliphatic Amine Mixture	Trade Secret	40 – 50%

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

Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Flush immediately with copious amounts of water. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing.

Eye contact	Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical attention. If medical care is not promptly available, continue to irrigate for one hour.
Ingestion	Get medical attention. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side
Inhalation	Get medical attention. Move to fresh air. Supplemental oxygen may be indicated.
<u>Indication of immediate medical attention and special treatment needed, if necessary</u>	
Notes to physician	Symptomatic and supportive therapy as needed.
Specific treatments	No specific treatments.

5. Fire-Fighting Measures

Suitable extinguishing media	Alcohol-resistant foam. Carbon dioxide (CO ₂). Dry chemical Dry sand or limestone powder
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 very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer, or drain.
Hazardous decomposition products	Carbon dioxide, carbon monoxide, and 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	Avoid contact with skin. A face shield should be worn. Use personal protective equipment. Wear self-contained breathing apparatus (SCBA) with a full face-piece operated in a positive pressure mode.
Further information	None.

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 breath vapor or mist. Provide adequate ventilation. Wear proper protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing.
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, watercourses, basements or confined areas. Contain and collect spillage with inert, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Wash the spill area clean with water and detergent, observing environmental requirements. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Environmental precautions	Use appropriate containment to avoid environmental contamination. Do not allow spill to enter into sewers or waterways.

7. Handling and Storage

Precautions for safe handling	Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Use personal protective equipment. When using, do not eat, drink or smoke.
Precautions/Recommendations for safe/proper storage	Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep from freezing.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits	None established.
Appropriate engineering controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection measures/Personal protective equipment	
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: chemical safety goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Butyl-rubber, Nitrile rubber, Neoprene Gloves, PVC disposable gloves, Impervious gloves.
Skin protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
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	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Discard contaminated leather goods. Ensure that eyewash stations and safety showers are close to the workstation location.

9. Physical and Chemical Properties

Chemical family	Amine curing agent
Appearance	Liquid
Physical State	

Form	Liquid
Color	Slightly yellow
Odor	Ammoniacal
Density (Specific Gravity)	0.94
Viscosity	240 – 260 CPS @77 °F (25 °C)
pH	Alkaline
Melting point/freezing point	N/A
Initial boiling point and boiling range	399°F(204°C)
Flash point	230°F(110°C)
Evaporation rate	N/A
Flammability (solid, gas)	N/A
Upper/lower flammability limit (by volume)	N/A
Upper flammability limit (by volume)	N/A
Lower flammability limit (by volume)	N/A
Material VOC	None
Vapor density	N/A
Relative density	N/A
Solubility in water	< 0.1 g/l
Partition coefficient: n-octanol/water	N/A
Auto-ignition temperature	N/A
Decomposition temperature	N/A

10.Stability and Reactivity

Reactivity	Stable under normal conditions.
Chemical Stability	Stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	Organic acids (i.e. acetic acid, citric acid, etc.). Mineral acids. Sodium hypochlorite. Oxidizing agents.
Hazardous decomposition products	Nitric acid Ammonia Aldehydes Nitrogen oxides (NO _x) Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon monoxide. Carbon dioxide (CO ₂).
Other hazards	None known.

11. Toxicological Information

Acute Health Hazard (components)

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

Component	Result	Species	Dose	Exposure
Nonyl Phenol	LD50 Dermal	Rabbit	2,031 mg/kg	-
	LD50 Oral	Rat	1,412 mg/kg	-
Aliphatic Amines	LD50 Dermal	Rabbit	1870 mg/kg	-
	LD50 Oral	Rat	1170 mg/kg	-
	LC50 Inhalation	Rat	4.9 mg/l/1h	-
	LD50 Dermal	Rabbit	866 mg/kg	-
	LD50 Oral	Rabbit	2097 mg/kg	-

Irritation/Corrosion (components)

Classifies as corrosive per positive Corrositex Dermal Testing for this product.

Component	Result	Species	Test	Exposure
Aliphatic Amines	Skin – Corrosive	Rabbit	No official guidelines	-
	Eyes – Corrosive	Rabbit	No official guidelines	-

Sensitization

Classifies as a skin sensitizer per GHS calculations on additivity.

Component	Result	Species	Test	Exposure
Aliphatic Amines	Sensitizing	Guinea pig	OECD 406 Skin Sensitization	Skin

Mutagenicity

No information on the product itself.

Carcinogenicity

No information on the product itself.

Reproductive Toxicity

No information on the product itself.

Teratogenicity

No information on the product itself.

Specific target organ toxicity (single exposure)

No information on the product itself.

Component	Category	Route of exposure	Target organs
Aliphatic Amines	Category 3		Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

No information on the product itself.

Aspiration hazard

No information on the product itself.

Potential acute health effects

Eye Contact

Causes serious eye damage.

Inhalation

May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.

Skin Contact

Causes severe burns.

Ingestion

Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye Contact

Adverse symptoms may include the following:
Pain
Watering
Redness

Inhalation

Adverse symptoms may include the following:

Reduced fetal weight
 Increase in fetal deaths
 Skeletal malformations

Skin Contact

Adverse symptoms may include the following:
 Pain or irritation
 Redness
 Blistering may occur
 Reduced fetal weight
 Increase in fetal deaths
 Skeletal malformations

Ingestion

Adverse symptoms may include the following:
 Stomach pains
 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

No information on the product itself.

Component	Result	Species	Test	Endpoint
Aliphatic Amines	151 to 285 mg/kg/d	Rat	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test	Sub-acute NOAEL Oral
	>1000 mg/kg/d	Rat	OECD 410 Repeated Dose Dermal Toxicity: 21/28-day study	Sub-acute NOAEL Dermal

General

May cause damage to organs through prolonged or repeated exposure in contact with skin. 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

May damage the unborn child.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates (ATEmix)

Route	ATE value
Oral	1245.8 mg/kg
Dermal	1567.8 mg/kg
Inhalation (vapors)	24.87 mg/l

12. Ecological Information

Ecotoxicity

No information on the product itself.

Component	Test	Endpoint	Exposure	Species	Result
Nonyl Phenol	ASTM	Acute EC50	48 h	Daphnia	0.085 mg/l
	ASTM	Acute LC50	96 h	Fish	0.05 mg/l

	Unknown guidelines	EbC50 (biomass)	72 h	Algae	1.3 mg/l
	ASTM	Chronic NOEC	91 d	Fish	0.006 mg/l
Aliphatic Amines	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 h	Algae	>1000 mg/l
	OECD 202 Daphnia sp. Acute Immobilization Test	Acute EC50	48 h static	Daphnia	58 mg/l
		Acute EC50	72 h	Algae	>100 mg/l
		Acute EC50	48 h	Daphnia	19.7 mg/l

Persistence and degradability No information on the product itself.

Component	Test	Period	Result
Nonyl Phenol	EPA OPPTS	63 d	100%
	OECD	56 d	50%
	OECD 301B Ready Biodegradability – CO2 Evolution Test	35 d	48.2%

Bioaccumulative Potential No information on the product itself.

Component	LogPow	BCF	Potential
Nonyl Phenol	5.4	740	High

Mobility in Soil No information on the product itself.

Soil/water partition coefficient (KOC) No information on the 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	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-aminoethylpiperazine)	Class 8 II	
TDG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-aminoethylpiperazine)	Class 8 II	
IMO/IMDG	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-aminoethylpiperazine)	Class 8 II	Marine pollutant
IATA	UN2735	AMINES, LIQUID, CORROSIVE, N.O.S. (n-aminoethylpiperazine)	Class 8 II	

*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.

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

California Prop. 65

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

EPA SARA 302 Extremely Hazardous Substances

None.

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 Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product Reportable 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

None required.

CEPA Toxic substances

Listed.

INTERNATIONAL REGULATIONS

International Lists

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

Canada inventory: All components are listed or exempted.

Korea inventory: All components are listed or exempted.

Japan inventory: All components are listed or exempted.

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

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

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

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

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

HMIS Rating

Health	3
Flammability	1
Physical Hazard	0

Date of Preparation	March 15, 2018
Date of Last Revision	February 8, 2017
Revision #	3.0
More Information	1-253-333-8118
Prepared by	N. Kim

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