

1. Product Identification

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| Product name | System 51 Slow Hardener, Part B |
| SDS Number | 0802B00 |
| Product type | Amine curing agent. |
| Recommended use of the chemical and restrictions on use | Directed at, but not limited to, the laminating and coating of wood, composite materials, and other inorganic 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@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

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|---|---|
| Classification of substance or mixture/Signal Word | DANGER ACUTE TOXICITY: DERMAL – Category 4 ACUTE TOXICITY: INHALATION -Category 3 SKIN CORROSION/IRRITATION – Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1 SKIN SENSITIZATION – Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] – Category 3 ACUTE AQUATIC TOXICITY – Category 3 |
|---|---|

GHS Label Elements**Hazard Pictograms**

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| Hazard Statements/Classification of substance or mixture | 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. H331 Toxic if inhaled. H335 May cause respiratory irritation. H402 Harmful to aquatic life. |
|---|--|

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 fumes/vapors.
 P261 Avoid breathing fumes/vapors.
 P264 Wash hands and exposed skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated clothing should not be allowed out of the workplace.
 P273 Avoid release to the environment.
 P280 Wear eye protection/face protection. Wear protective gloves.

Response

- 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 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.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P362 + P364 Take off contaminated clothing and wash it before reuse.
 P310 Immediately call a POISON CENTER/doctor.

Storage

- P405 Store locked up.

Disposal

- P501 Disposal of contents/container to be specified in accordance with regulations.

Hazards not otherwise classified (HNOC)

None known.

3. Composition/Information On Ingredients

| Chemical Name | CAS Number | Content (%) |
|----------------------------------|--------------|-------------|
| Modified Aliphatic Amine Mixture | Trade Secret | 60 – 70% |
| Tetraethylenepentamine | 112-57-2 | 10 – 20% |
| Diethylenetriamine | 111-40-0 | 5 – 10% |
| Triethylenetetramine | 112-24-3 | 1 – 5% |

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 off immediately with plenty of water for at least 20 minutes. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Take off contaminated clothing and shoes immediately.

Eye contact

Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.

Ingestion

If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.

Inhalation

If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

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

Notes to physician

Application of corticosteroid cream has been effective in treating skin irritation.

Specific treatments

No specific treatment.

5. Fire-Fighting Measures

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| Suitable extinguishing media | Alcohol-resistant foam, carbon dioxide (CO ₂), dry chemical, dry sand, limestone powder. |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | May generate ammonia gas. May generate toxic nitrogen oxide gases. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes. |
| Hazardous decomposition products | Decomposition products may include the following materials: Carbon dioxide, carbon monoxide, 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 | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| Further information | Do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |

6. Accidental Release Measures

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| Personal precautions | Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas. |
| 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 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). Construct a dike to prevent spreading. |

7. Handling and Storage

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| Precautions for safe handling | Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use only in well-ventilated areas. Avoid breathing vapors and/or aerosols. Put on appropriate personal protective equipment (see Section 8). When using, do not eat, drink or smoke. |
| Precautions/Recommendations for safe/proper storage | Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. Exposure Controls/Personal Protection

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| Occupational Exposure Limits | None established. |
| Appropriate engineering controls | Provide readily accessible eye wash stations and safety showers. Provide natural ventilation adequate to ensure concentrations are kept below exposure limits. |
| Environmental exposure controls | 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. Provide readily accessible eye wash stations and safety showers. Wash hands at the end of each work shift and before eating, smoking or using the toilet. |

9. Physical and Chemical Properties

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|---|------------------------------------|
| Chemical family | Amine curing agent |
| Appearance | Straw-yellow liquid |
| Physical State | |
| Form | Liquid |
| Color | Straw-yellow |
| Odor | Ammonia-like odor |
| Density (Specific Gravity) | 1.03 |
| Viscosity | 70 – 80 CPS @25°C |
| pH | N/A |
| Melting point/freezing point | N/A |
| Initial boiling point and boiling range | 204°C |
| Flash point | >110°C (Pensky-Martins Closed Cup) |
| Evaporation rate | Slower than ether |
| Flammability (solid, gas) | N/A |
| Upper/lower flammability limit (by volume) | N/A |
| Material VOC | None |
| Vapor density | Heavier than air |
| Relative density | N/A |

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| Solubility in water | Negligible |
| Partition coefficient: n-octanol/water | N/A |
| Auto-ignition temperature | N/A |
| Decomposition temperature | N/A |

10. Stability and Reactivity

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|------------------------------------|---|
| 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 | Epoxy resins and epoxy resin hardeners react with each other producing heat. They should not be mixed with each other under uncontrolled conditions or in a large mass as the ensuing exothermic reaction may result in heat and smoke. |
| Incompatible materials | Strong oxidizing agents, mineral acids. |
| Hazardous decomposition products | Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition. Decomposition of this product may emit oxides of carbon and nitrogen. |
| Other hazards | None known. |

11. Toxicological Information

Acute Health Hazard (components) No data is available for the product itself.

| Component | Result | Species | Dose | Exposure |
|------------------------|-----------------------|---------|--------------------------|----------|
| Tetraethylenepentamine | Acute LD50 Oral | Rat | 2,140 mg/kg | - |
| | Acute LD50 Dermal | Rabbit | >660 mg/kg (Estimated) | - |
| Diethylenetriamine | Acute LD50 Dermal | Rabbit | 1,045 mg/kg | - |
| | Acute LC50 Inhalation | Rat | >0.07 – <0.3 mg/l | 4 h |
| Triethylenetetramine | Acute LD50 Oral | Rat | >2,000 mg/kg (Estimated) | - |
| | Acute LD50 Dermal | Rabbit | >2,000 mg/kg (Estimated) | - |

Irritation/Corrosion (components) Classifies as corrosive to skin and eyes per GHS calculations on additivity.

| Component | Result | Species | Test | Exposure |
|------------------------|-------------------|---------|------|----------|
| Tetraethylenepentamine | Corrosive | Rabbit | Skin | - |
| | Severe Irritation | - | Eyes | - |
| Diethylenetriamine | Corrosive | - | Skin | - |
| | Corrosive | - | Eyes | - |
| Triethylenetetramine | Mild Irritation | Rabbit | Skin | - |

Sensitization May cause sensitization by skin contact.

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.

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**Eye Contact**

Causes serious eye damage.

Inhalation

May cause respiratory irritation.

Skin Contact

Causes severe skin burns.

Ingestion

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

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

No data is available on the product itself.

Inhalation

No data is available on the product itself.

Skin Contact

No data is available on the product itself.

Ingestion

No data is available on the product itself.

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**General**

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

Carcinogenicity

No significant effects or critical hazards.

Mutagenicity

No significant effects or critical hazards.

Teratogenicity

No significant effects or critical hazards.

Developmental effects

No significant effects or critical hazards.

Fertility effects

No significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates (ATEmix)**

| Route | ATE value |
|---------------------|--------------|
| Oral | 2079.8 mg/kg |
| Dermal | 1381.6 mg/kg |
| Inhalation (vapors) | 2.11 mg/l |

12. Ecological Information**Ecotoxicity**

No data is available on the product itself.

| Component | Test | Exposure | Species | Result |
|--------------------|------|----------|---------|----------|
| Diethylenetriamine | LC50 | 96 h | Fish | 430 mg/l |
| | EC50 | 48 h | Daphnia | 16 mg/l |
| | NOEC | 28 d | Fish | >10 mg/l |

| | | | | |
|--|------|------|---------|----------|
| | NOEC | 21 d | Daphnia | 5.6 mg/l |
|--|------|------|---------|----------|

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

Bioaccumulative Potential No data is available on the product itself.

| Component | LogPow | BCF | Potential |
|--------------------|-------------------|-----------------|-----------|
| Diethylenetriamine | -1.58 (estimated) | <0.3 (measured) | Low |

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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

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. (Ethylene amine) | Class 8 III | |
| TDG | UN2735 | Amines, liquid, corrosive, n.o.s. (Ethylene amine) | Class 8 III | |
| IMO/IMDG | UN2735 | Amines, liquid, corrosive, n.o.s. (Ethylene amine) | Class 8 III | |
| IATA (Cargo) | UN2735 | Amines, liquid, corrosive, n.o.s. (Ethylene amine) | 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

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 manufactured with ozone depleting substances.

Pennsylvania – RTK

Diethylenetriamine

California Prop. 65

WARNING! This product contains less than 0.1% of a chemical known in the State of California to cause cancer.

| Ingredient Name | Cancer | Reproductive |
|-----------------|--------|--------------|
| Propylene oxide | Yes | No |

EPA SARA 302/304/311/312 Hazardous Chemicals

Acute Health Hazard, Chronic Health Hazard

CERCLA Hazardous substances

| Component | % | Section 304 CERCLA Hazardous Substance | CERCLA Reportable Quantity (Lbs) | Product Reportable Quantity (Lbs) |
|-----------------|------|--|----------------------------------|-----------------------------------|
| Propylene oxide | 0.01 | Listed | 100 | |

United States inventory (TSCA 8b)

All components are listed or exempted.

CANADA

WHMIS (Canada)

Class E: Corrosive material.

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 3
Flammability 1
Physical Hazard 0

Date of Preparation

February 23, 2017

Date of Last Revision

Revision #

1.0

More Information

1-253-333-8118

Prepared by

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