# 1. Product and Company Identification

**Product Code:** 402-B  
**Product Name:** 402 Urethane Topcoat Hardener - Part B  
**Trade Name:** 402 Urethane Topcoat Hardener - Part B  

**Distributor Information**

- **Company Name:** Epoxy Systems, Inc.  
  20774 W Pennsylvania Ave.  
  Dunnellon, Florida 34421  
- **Phone Number:** +1 (352) 489-1666  
- **Emergency Contact:** PERS (USA) (800) 633-8253  
- **Alternate Emergency Contact:** PERS (International) +1 (801) 629-0667  

**Intended Use:** Industrial Maintenance Coatings

# 2. Hazards Identification

### GHS Classification

- **Flammable Liquids, Category 3**
- **Acute Toxicity: Inhalation, Category 4**
- **Serious Eye Damage/Eye Irritation, Category 2A**
- **Skin Sensitization, Category 1**
- **Target Organ Systemic Toxicity (single exposure), Category 3**

### Placard and Key Word

- **Flammable Liquid:** Flame  
- **Warning:** Exclamation point  
- **Harmful if inhaled:** Exclamation point  
- **Causes serious eye irritation:** Exclamation point  
- **May cause an allergic skin reaction:** Exclamation point  
- **May cause respiratory irritation, or may cause drowsiness and dizziness:** Exclamation point

### GHS Hazard Phrases

- H226 - Flammable liquid and vapor.  
- H332 - Harmful if inhaled.  
- H319 - Causes serious eye irritation.  
- H315 - Causes skin irritation.  
- H313+333 - May be harmful in contact with skin or if inhaled.  
- H335 - May cause respiratory irritation. EUH204 - Contains isocyanates. May produce an allergic reaction.

### GHS Precaution Phrases

- P281 - Use personal protective equipment as required.  
- P233 - Keep container tightly closed.  
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
- P240 - Ground/bond container and receiving equipment.  
- P241 - Use explosion-proof electrical/ventilating/lighting/.../ equipment.  
- P243 - Take precautionary measures against static discharge.  
- P242 - Use only non-sparking tools.  
- P271 - Use only outdoors or in a well-ventilated area.  
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
- P285 - In case of inadequate ventilation wear respiratory protection.  
- P264 - Wash hands thoroughly after handling.
GHS Response Phrases
P370+378 - In case of fire, use Carbon Dioxide, Dry Chemical, Foam, Water spray for large fires to extinguish.
P370 - In case of fire: P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P314 - Get medical attention/advice if you feel unwell.
P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+313 - If eye irritation persists, get medical advice/attention.
P302+352 - IF ON SKIN: Wash with plenty of soap and water. P333+313 - If skin irritation or rash occurs, seek medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P311 - Call a POISON CENTER or doctor/physician.

GHS Storage and Disposal Phrases
P501 - Dispose of contents/container to local, state, and federal authority requirements.
P402+404 - Store in a dry place and/or in closed container.
P403 - Store in well-ventilated place.
P405 - Store locked up.

Potential Health Effects (Acute and Chronic)
May cause skin, eye, and respiratory irritation. May cause skin sensitization. May cause respiratory sensitization.

Inhalation
May cause respiratory irritation. May cause allergic respiratory reaction.

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

Eye Contact
Substance causes moderate eye irritation.

Ingestion
May be harmful if swallowed.

Recommended Exposure Limits
Not established.

Medical Conditions Generally Aggravated By Exposure
Skin disorders, Respiratory disorders, Eye disorders, Skin Allergies.

OSHA Regulatory Status:
This material is classified as hazardous under OSHA regulations.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Poly(hexamethylene disocyanate)</td>
<td>28182-81-2</td>
<td>60 - 90 %</td>
</tr>
<tr>
<td>2. Butyl acetate</td>
<td>123-86-4</td>
<td>5.0 - 20 %</td>
</tr>
<tr>
<td>3. Xylene</td>
<td>1330-20-7</td>
<td>5.0 - 15 %</td>
</tr>
<tr>
<td>4. Ethyl Benzene</td>
<td>100-41-4</td>
<td>1.0 - 5.0 %</td>
</tr>
</tbody>
</table>

4. First Aid Measures

Emergency and First Aid Procedures
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use first aid treatment according to the nature of the injury.

In Case of Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If experiencing respiratory symptoms: Get medical attention immediately.
In Case of Skin Contact
In case of contact, immediately wash skin with soap and copious amounts of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops or persists.

In Case of Eye Contact
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

In Case of Ingestion
Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Signs and Symptoms Of Exposure
May cause allergic skin reaction. May cause rash on skin, and redness in eyes. May cause coughing by inhalation of a mist or spray. If material is heated, sprayed, vapors from this material can produce asthmatic sensitization to the respiratory system.

5. Fire Fighting Measures

Flash Pt: ~ 91.00 F  Method Used: Closed Cup
Explosive Limits: LEL: NE  UEL: NE
Autoignition Pt: 752.00 F

Fire Fighting Instructions
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Flammable Properties and Hazards
Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Hazardous Combustion Products
In a fire, product may produce the following: Carbon monoxide, Oxides of nitrogen, Traces of hydrogen cyanide, Isocyanate vapors

Suitable Extinguishing Media
Dry chemical or CO2. Foam.

Unsuitable Extinguishing Media
Reacts with water, with formation of carbon dioxide.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled
PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL.
Absorb with sand or vermiculite and place in closed containers for disposal. Ventilate the area.

Protective Precautions, Protective Equipment and Emergency Procedures
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Where splashing is possible, full chemically resistant protective clothing, and boots are required.

Environmental Precautions
Prevent entry into waterways, sewers, basements or confined areas.

7. Handling and Storage

Hazard Label Information:
Keep away from heat and flame.  Keep under a nitrogen blanket.  Avoid inhalation of vapor or mist.  Store in airtight containers

Precautions To Be Taken in Handling
Wear all personal protection required. Wash thoroughly after handling. Provide adequate ventilation. Do not breathe vapor. Do not get in eyes, on skin or on clothing.
Precautions To Be Taken in Storing

Protect from moisture. Purge container with nitrogen before resealing. Keep dry. Store in cool/well-ventilated place. Store away from incompatible material.

Other Precautions

Keep away from sources of ignition - No smoking. Keep away from heat, sparks, and flame.

8. Exposure Controls/Personal Protection

Protective Equipment Summary - Hazard Label Information:

Chemical resistant gloves  Safety glasses, or goggles  Impervious clothing  Chemical resistant boots

Respiratory Equipment (Specify Type)

Respiratory protection in case of vapor/aerosol release. Combination filter for gases/vapors of organic compounds and solid and liquid particles (i.e., EN 14387 Type A-P2). In isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures.

Eye Protection

Safety glasses, or goggles.

Protective Gloves

Nitrile rubber and Neoprene are recommended. Check during use that the gloves are still retaining their protective properties.

Other Protective Clothing

Where splashing is possible, full chemically resistant protective clothing, safety glasses or face shield and boots are required.

Engineering Controls (Ventilation etc.)

Good general ventilation should be sufficient to control airborne levels. Safety shower and eye bath.

Work/Hygienic/Maintenance Practices

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Environmental Exposure Controls

Avoid runoff into storm sewers and ditches which lead to waterways. May be hazardous to the environment if released in large quantities.

9. Physical and Chemical Properties

Physical States:  [ ] Gas  [X] Liquid  [ ] Solid
Melting Point:  NE
Boiling Point:  257.00 F - 260.00 F
Decomposition Temperature:  NE
Autoignition Pt:  752.00 F
Flash Pt:  ~ 91.00 F  Method Used: Closed Cup
Explosive Limits:  LEL: NE  UEL: NE
Specific Gravity (Water = 1):  ~ 1.059
Density: ~ 8.84 LB/GL

Vapor Pressure (vs. Air or mm Hg): NE
Vapor Density (vs. Air = 1): NE
Evaporation Rate: NE
Solubility in Water: NP

Solubility Notes
Insoluble - Reacts slowly with water to liberate CO2 gas.

Percent Volatile: NP 25.0 % by weight.
VOC / Volume: NP
HAP / Volume: NP
Saturated Vapor Concentration: NE

Appearance and Odor
Odor: Solvent odor.
Appearance: Clear to light yellow.

10. Stability and Reactivity

Stability: Unstable [ ] Stable [ X ]

Conditions To Avoid - Instability
Extreme temperatures. Moisture.

Incompatibility - Materials To Avoid
Reacts with alcohols, amines. Copper alloys. Reacts with water, with formation of carbon dioxide.

Hazardous Decomposition Or Byproducts
Carbon monoxide, Oxides of nitrogen, Traces of hydrogen cyanide, Isocyanate vapors

Possibility of Hazardous Polymerization:
Will occur [ ] Will not occur [ X ]

Conditions To Avoid - Hazardous Reactions
Will not undergo hazardous polymerization in normal storage conditions.

11. Toxicological Information

Toxicological Information
May cause sensitization by inhalation. May cause sensitization by skin contact.
CAS# 1330-20-7:
Acute toxicity, LD50, Oral, Rat, 4300. MG/KG.
Results:
Liver: Other changes.
Kidney, Ureter, Bladder: Other changes.
- AMA Archives of Industrial Health., For publisher information, see AEHLAU, Chicago, IL, Vol/p/yr: 14,387, 1956

Acute toxicity, LC50, Inhalation, Rat, 5000. PPM, 4 H.
Results:
Behavioral: Convulsions or effect on seizure threshold.
Behavioral: Ataxia.
Lungs, Thorax, or Respiration:Dyspnea.
Chronic Toxicological Effects
Respiratory or skin sensitization.

Irritation or Corrosion
May cause slight skin irritation or skin sensitization. May be slightly irritating to eyes and respiratory system.

Symptoms related to Toxicological Characteristics
May cause respiratory sensitization. May cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Poly(hexamethylene diisocyanate)</td>
<td>28182-81-2</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>2. Butyl acetate</td>
<td>123-86-4</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>3. Xylene</td>
<td>1330-20-7</td>
<td>3</td>
<td>A4</td>
<td></td>
<td>n.a.</td>
</tr>
<tr>
<td>4. Ethyl Benzene</td>
<td>100-41-4</td>
<td>2B</td>
<td>A3</td>
<td>n.a.</td>
<td></td>
</tr>
</tbody>
</table>

12. Ecological Information

General Ecological Information
Avoid release to the environment.

Results of PBT and vPvB assessment
No data available.

Persistence and Degradability
Not readily biodegradable.

Bioaccumulative Potential
No data available.

Mobility in Soil
not reported, unknown.

13. Disposal Considerations

Waste Disposal Method
Dispose of this product, product solutions and its container according to federal, state and local authority requirements. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name: Resin solution, [flammable] (contains Xylene, N-Butyl Acetate)
DOT Hazard Class: 3
DOT Hazard Label: FLAMMABLE LIQUID
UN/NA Number: UN1866
Packing Group: III
Precautionary Label: Warning! Flammable Liquid. Ventilation is normally required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Ground and bond containers and equipment before transferring to avoid static sparks. Always read Safety Material Data Sheet before use.

AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name: Resin solution, [flammable] (contains Xylene, N-Butyl Acetate)

Note: The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that
mode of transport. Shipment compliance is the responsibility of the person offering the product for transport.

UN Number: 1866
Hazard Class: 3 - FLAMMABLE LIQUID
Packing Group: III

MARINE TRANSPORT (IMDG/IMO)

IMDG/IMO Shipping Name: Resin solution, [flammable] (contains Xylene, N-Butyl Acetate)
UN Number: 1866
Hazard Class: 3 - FLAMMABLE LIQUID
Packing Group: III
Marine Pollutant: No

15. Regulatory Information

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Poly(hexamethylene diisocyanate)</td>
<td>28182-81-2</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2. Butyl acetate</td>
<td>123-86-4</td>
<td>No</td>
<td>Yes 5000 LB</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3. Xylene</td>
<td>1330-20-7</td>
<td>No</td>
<td>Yes 100 LB</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Ethyl Benzene</td>
<td>100-41-4</td>
<td>No</td>
<td>Yes 1000 LB</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Regulatory Information

SARA Section 311/312: Acute, Chronic Health Hazard. Fire Hazard.

California Prop. 65:
This product contains the following Proposition 65 chemicals: Ethylbenzene 1.5% CAS# 100-41-4

16. Other Information

CA=CIRCA  NA=NOT AVAILABLE  NE=NOT ESTABLISHED  NR=NOT REGULATED  NP= NOT APPLICABLE  PR=PROPRIETARY  TS=TRADE SECRET  ?=UNKNOWN.

Company Policy or Disclaimer

The information contained in this MSDS is taken from sources believed to be accurate as of the date hereof; however Epoxy Systems, Inc. makes no expressed or implied warranty in respect to the accuracy of the information or the suitability of the recommendations, and assumes no liabilities to any user thereof.

Revision Date: 08/31/2015