1. Product and Company Identification

Product Code: 461-CLEAR
Product Name: 461 High Solids Urethane Topcoat - Clear Part A
Trade Name: 461 High Solids Urethane Topcoat - Clear Part A

Manufacturer Information

Company Name: Epoxy Systems, Inc.
20774 W Pennsylvania Ave
Dunnellon, Florida 34431

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
Acute Toxicity: Inhalation, Category 4
Respiratory Sensitization, Category 1
Skin Sensitization, Category 1

GHS Placard
Exclamation point
Health hazard
Exclamation point

GHS Key word
Warning
Danger
Warning

GHS Hazard Phrases
H332 - Harmful if inhaled.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 - May cause an allergic skin reaction.
H335 - May cause respiratory irritation.
H373 - May cause damage to lungs through prolonged or repeated exposure.

GHS Precaution Phrases
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 - Use only outdoors or in a well-ventilated area.
P285 - In case of inadequate ventilation wear respiratory protection.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

GHS Response Phrases
P304+341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P342+311 - If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.
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.
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.
GHS Storage and Disposal Phrases

P501 - Dispose of contents/container to local, state, and federal authority requirements.
P402 - Store in a dry place.

Potential Health Effects (Acute and Chronic)

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

Inhalation

May cause respiratory irritation. May cause allergic respiratory reaction.

Skin Contact

May cause skin irritation. May cause allergic skin reaction.

Eye Contact

May cause 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>Poly(hexamethylene diisocyanate)</td>
<td>28182-81-2</td>
<td>&gt;=99 %</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

Mild irritation effect. May cause allergic skin reaction. If material is heated, sprayed, vapors from this material can produce asthmatic sensitization to the respiratory system.

5. Fire Fighting Measures

Flash Pt: > 300.00 F  Method Used: Closed Cup
Explosive Limits: LEL: NE  UEL: NE
Autoignition Pt: No data available.
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 extinguishing media, 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:
Avoid contact with skin and eyes. Do not get on skin and clothing. Avoid inhalation of vapor or mist.

Precautions To Be Taken in Handling
Provide adequate ventilation. Do not breathe vapor. Do not get in eyes, on skin or on clothing.

Precautions To Be Taken in Storing
Store away from incompatible material. Store in cool/well-ventilated place.

Other Precautions
Wash thoroughly after handling.

8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(hexamethylene diisocyanate)</td>
<td>28182-81-2</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Protective Equipment Summary - Hazard Label Information:
Neoprene 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 (f.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.
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

<table>
<thead>
<tr>
<th>Physical States:</th>
<th>[ ] Gas</th>
<th>[X] Liquid</th>
<th>[ ] Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Point:</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature:</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoignition Pt:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Pt:</td>
<td>&gt; 300.00 F Method Used: Closed Cup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive Limits:</td>
<td>LEL: NE UEL: NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (Water = 1):</td>
<td>~ 1.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density:</td>
<td>~ 9.76 LB/GL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure (vs. Air or mm Hg):</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density (vs. Air = 1):</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>N.P.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Volatile:</td>
<td>N.A.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC / Volume:</td>
<td>N.P.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP / Volume:</td>
<td>N.P.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturated Vapor Concentration:</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appearance and Odor
Odor: Mild.
Appearance: Clear.

10. Stability and Reactivity

<table>
<thead>
<tr>
<th>Stability:</th>
<th>Unstable [ ] Stable [X]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td></td>
</tr>
<tr>
<td>Reacts with alcohols, amines. Reacts with water, with formation of carbon dioxide.</td>
<td></td>
</tr>
</tbody>
</table>

Conditions To Avoid - Instability
Extreme temperatures.

Incompatibility - Materials To Avoid
React with alcohols, amines. 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
Extreme temperatures. 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.

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.

Hazardous Components (Chemical Name) | CAS # | NTP | IARC | ACGIH | OSHA
--- | --- | --- | --- | --- | ---
1. Poly(hexamethylene diisocyanate) | 28182-81-2 | n.a. | n.a. | n.a. | n.a.

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
Incorporate or dispose of unused material, residues and containers in a licensed facility in accordance with all applicable local, state and federal regulations. Do not discharge substance/product into sewage system.

14. Transport Information

LAND TRANSPORT (US DOT)
DOT Proper Shipping Name
Not Regulated.

AIRC TRANSPORT (ICAO/IATA)
ICAO/IATA Shipping Name
Not Regulated.

MARINE TRANSPORT (IMDG/IMO)
IMDG/IMO Shipping Name
Not Regulated.

Marine Pollutant:
No

15. Regulatory Information

US EPA SARA Title III
Hazardous Components (Chemical Name) | CAS # | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110
--- | --- | --- | --- | --- | ---
1. Poly(hexamethylene diisocyanate) | 28182-81-2 | No | No | No | No
Regulatory Information

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

<table>
<thead>
<tr>
<th>16. Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA=CIRCA NA=NOT AVAILABLE NE=NOT ESTABLISHED NR=NOT REGULATED NP= NOT APPLICABLE PR=PROPRIETARY TS=TRADE SECRET ?=UNKNOWN.</td>
</tr>
</tbody>
</table>

Company Policy or Disclaimer

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