SAFETY DATA SHEET

Product: 805-A
Revision Date: 6/01/2015

1. MATERIAL IDENTIFICATION

Product Name: Aremco-Bond 805-A Activator
Product Description: Polyamine Mixture, Clear Amber, Amine Odor
Product Use: High Performance Adhesive Hardener
Manufacturer: Aremco Products, Inc.
707-B Executive Blvd.
Valley Cottage, NY 10989
Telephone: 845-268-0039
Emergency Phone: 845-268-0039 or Infotrac (24/7) 800-535-5053

2. HAZARDS IDENTIFICATION

GHS Classification:
Skin Corrosion Category 1B
Skin Sensitization Category 1
Eye Damage/Irritation Category 1
Combustible Liquid Category 4

GHS Label Elements:

GHS Hazard Determining Components:
Fatty Acids, Tall-Oil, Reaction Products with Teraethylenepentamine
3,6,9-Triazaundecamethylene diamine
3-Aminomethyl-3,5,5-Trimethylcyclohexylamine
Reaction Product: Bisphenol-A-(Epichlorhydrin) Epoxy Resin
3,6-Diazaoctanethylenediamine

GHS Hazard Statements for Health Hazards:
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H227 Combustible liquid.

GHS Precautionary Statements - Prevention:
P201 Keep away from flames and hot surfaces; no smoking.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves and eye/face protection.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.

GHS Precautionary Statements – Response:
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P303+P361+P353 IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs, get medical attention.
P363 Wash contaminated clothing before reuse.
P310 Immediately call a poison center or doctor.
P370+P378 In case of fire, use CO2, extinguishing powder or water spray.
GHS Storage/Disposal:
P403+P235  Store in a well-ventilated place and keep cool
P501  Dispose in accordance with local, regional, national or international regulations.

3. COMPOSITION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Concentration</th>
<th>GHS Product Identifier</th>
</tr>
</thead>
</table>
| Fatty Acids, Tall-Oil, Reaction Products with Teraethylenepentamine | 68953-36-6 | 273-201-6 | 50.0-100.0% | H227 Combustible Liquid, Cat 4  
H314 Skin Corrosion//Irritation, Cat 1B  
H317 Sensitization, Skin, Cat 1  
H318 Eye Damage/Irritation, Cat 1 |
| 3,6,9-Triazaundecamethylenediamine | 112-57-2 | 203-986-2 | 10.0-25.0% | H302 Acute Toxicity, Oral, Cat 4  
H312 Acute Toxicity, Dermal, Cat 4  
H314 Skin Corrosion//Irritation, Cat 1B  
H317 Sensitization, Skin, Cat 1  
H318 Eye Damage/Irritation, Cat 1 |
| 3-Aminomethyl-3,5,5-Trimethylcyclohexylamine | 2855-13-2 | 220-666-8 | 5.0-10.0% | H302 Acute Toxicity, Oral, Cat 4  
H312 Acute Toxicity, Dermal, Cat 4  
H314 Skin Corrosion//Irritation, Cat 1B  
H317 Sensitization, Skin, Cat 1 |
| Reaction Products: Bisphenol-A-(Epichlorhydrin) Epoxy Resin (number average molecular weight <= 700) | 25068-38-6 | 500-033-5 | 5.0-10.0% | H315, Skin Corrosion/Irritation, Cat 2  
H317 Sensitization, Skin, Cat 1  
H319 Eye Damage/Irritation, Cat 2A |
| 3,6-Diazaoctanethylenediamine | 112-24-3 | 203-950-6 | 1.0-2.5% | H302 Acute Toxicity, Oral, Cat 4  
H312 Acute Toxicity, Dermal, Cat 4  
H314 Skin Corrosion//Irritation, Cat 1B  
H317 Sensitization, Skin, Cat 1 |

4. FIRST AID MEASURES

**Eye Exposure:**
Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If a physician is not immediately available, eye irrigation should be continued for an additional 15 minutes.

**Skin Exposure:**
Immediately wipe excess material off skin with a dry cloth then wash with plenty of soap and water for at least 5 minutes. See medical attention if irritation develops or persists. Remove contaminated clothing and shoes and clean thoroughly before re-use.

**Inhalation:**
Remove from immediate source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Seek medical attention. Symptoms can be delayed several hours.

**Ingestion:**
If swallowed, do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of milk or water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention immediately. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give additional milk or water to further dilute the chemical.

5. FIRE FIGHTING MEASURES

**Flash Point:**
201 °F (94 °C) Closed Cup

**Flammable Limits:**
Not available.

**Auto-Ignition Temperature:**
Product is not self-igniting and does not represent an explosion hazard.

**Extinguishing Media:**
Use carbon dioxide, dry chemical, foam, or water spray.

**Special Fire Fighting Procedures:**
Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and full chemical resistant protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Extreme heat or water contamination may cause closed containers to explode.
6. ACCIDENTAL RELEASE MEASURES

**Personal Protection:** Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. Use NIOSH approved respirator where mist occurs. Ensure adequate ventilation.

**Spill Cleanup:** Mop up liquid and absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust) and dispose in accordance with federal, state and local regulations or permits. Flush area with solvent then water to complete cleanup.

7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Keep container closed. Promptly clean residue from closures with cloth and solvent. Promptly clean up spills.

**Storage:** Store at room temperature in a dry, well ventilated area, away from combustible material, and away from ignition sources. Keep containers closed. Store in clean plastic or steel containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>TLV (mg/m³)</th>
<th>PEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,6,9-Triazaundecamethylenediamine</td>
<td>112-57-2</td>
<td>203-986-2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3,6-Diazaoctanethylenediamine</td>
<td>112-24-3</td>
<td>203-950-6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Engineering Controls:** Normal ventilation for good working conditions should be used. Keep containers closed. Safety shower and eyewash fountain should be within direct access.

**Respiratory Protection:** This product is not considered respirable in either the liquid or cured forms. However, if the cured product is polished, ground or chipped during processing, handling or use, powders may be released as airborne respirable particles. In these instances, appropriate personal protection equipment and local ventilation controls must be employed. If exposure limits are exceeded and local ventilation is unavailable, a supplied-air respirator or a self-contained NIOSH-approved vapor respirator is required.

**Skin Protection:** Wear body-covering protective clothing and gloves.

**Eye Protection:** Wear chemical goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form:</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Color:</strong></td>
<td>Light Yellow</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Amine Odor</td>
</tr>
<tr>
<td><strong>Odor Threshold:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Melting Point Range:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Boiling Point Range:</strong></td>
<td>424 °F (218 °C)</td>
</tr>
<tr>
<td><strong>Flash Point:</strong></td>
<td>201 °F (94 °C) Closed Cup</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous):</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Ignition Temperature:</strong></td>
<td>716 °F (380 °C) Closed Cup</td>
</tr>
<tr>
<td><strong>Decomposition Temperature:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Auto Igniting:</strong></td>
<td>Product is not self-igniting</td>
</tr>
<tr>
<td><strong>Danger of Explosion:</strong></td>
<td>Product does not present an explosion hazard</td>
</tr>
<tr>
<td><strong>Explosion Limits:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lower:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Upper:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Vapor Pressure (mm Hg):</strong></td>
<td>&lt; 1 @ 25 °C</td>
</tr>
<tr>
<td><strong>Density:</strong></td>
<td>0.9753 g/cc @ 20 °C</td>
</tr>
<tr>
<td><strong>Relative Density:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Vapor Density:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Evaporation Rate:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility Water:</strong></td>
<td>Not miscible or difficult to mix</td>
</tr>
<tr>
<td><strong>Partition Coefficient</strong></td>
<td></td>
</tr>
<tr>
<td><strong>(n-Octanol/Water):</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Viscosity, Dynamic:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Viscosity, Kinematic:</strong></td>
<td>Not Determined</td>
</tr>
<tr>
<td><strong>Volatile Organic Compounds:</strong></td>
<td>0.00 g/l</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal conditions of use and storage.

Conditions to Avoid: None if used according to specifications.

Materials to Avoid: Lewis or mineral acids, organic bases such as primary and secondary aliphatic amines, ketones, aldehydes, and oxidizing agents. A reaction accompanied by large heat release occurs when the product is mixed with acids.

Hazardous Polymerization: May occur with epoxy resins in large masses.

Hazardous Decomposition Materials: Nitrogen oxides, ammonia, carbon monoxide and unidentified organic compounds (some containing nitrogen) may be formed during thermal or oxidative decomposition or combustion. Nitrogen oxide can react with water vapors to form corrosive nitric acid.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity Data:

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>68953-36-6</td>
<td>Fatty acids, tall oil, reaction products with tetraethylenepentamine</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>&gt; 2000 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>&lt;= 2000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

CAS# 112-57-2 Tetraethylenepentamine

Dermal LD50 660 mg/kg (rabbit)

Primary Irritant Effect:

- **On the Skin:** Strong caustic effect on skin and mucous membranes.
- **On the Eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization is possible through inhalation. Sensitization is possible through skin contact.

Carcinogenic Effects: The product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

Other: Product may be toxic if ingested. Swallowing will lead to a strong caustic effect on the mouth and throat and to the danger of perforation of esophagus and stomach.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: No further relevant information available.

Persistence & Degradability: No further relevant information available.

Bioaccumulative Potential: No further relevant information available.

Mobility in Soil: No further relevant information available.

Ecotoxicity: Harmful to fish.

General Notes: Water hazard class 2 (self-assessment): hazardous for water. Do not allow product to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even small quantities leak into the ground. Harmful to aquatic organisms.

Results of PBT & vPvB Assessment:

- **PBT:** Not applicable.
- **vPvB:** Not applicable

Other Adverse Effects: No further information available.

13. DISPOSAL CONSIDERATIONS

Disposal: Keep out of surface waters, sewers, and waterways entering or leading to surface waters. Notify authorities if any exposure to the environment occurs or is likely to occur. Utilize an appropriate disposal facility, in compliance with federal, state and local environmental control regulations.

14. TRANSPORTATION INFORMATION

DOT UN Status: The material is not a regulated hazardous material for transportation.
15. REGULATORY INFORMATION

U.S. Federal Regulations

CERCLA: No CERCLA reportable quantity has been established for this material.

TSCA: All ingredients of this material are listed on the TSCA inventory.

SARA Title III

Sections 302, 304, 313: This product does not contain any substances reportable under these sections.

Sections 311, 312:

<table>
<thead>
<tr>
<th>Hazard Classes</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Immediate Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Delayed Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

International Inventory Status

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe (EINECS/ELINCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan (MITI)</td>
<td>Yes</td>
</tr>
<tr>
<td>South Korea (KECL)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

NFPA Ratings (scale 0 – 4)

Health, 3
Flammability, 1
Reactivity, 0
Personal Protection, H

HMIS Ratings (scale 0 – 4)

Health, 3
Flammability, 1
Reactivity, 0
Personal Protection, H
### Key Legend Information

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>ARD</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation &amp; Liability Act</td>
</tr>
<tr>
<td>DSL</td>
<td>Domestic Substance List</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Materials Identification System</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>ND</td>
<td>Not Determined</td>
</tr>
<tr>
<td>NE</td>
<td>Not Established</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>RE</td>
<td>Repeat Exposure</td>
</tr>
<tr>
<td>SARA</td>
<td>Superfund Amendments &amp; Reauthorization Act</td>
</tr>
<tr>
<td>SARA Title III</td>
<td>Emergency Planning &amp; Community Right to Know Act</td>
</tr>
<tr>
<td>SARA Section 302</td>
<td>Extremely Hazardous Substances</td>
</tr>
<tr>
<td>SARA Section 304</td>
<td>Emergency Release</td>
</tr>
<tr>
<td>SARA Section 311</td>
<td>MSDS/List of Chemicals &amp; Hazardous Inventory</td>
</tr>
<tr>
<td>SARA Section 312</td>
<td>Emergency &amp; Hazardous Inventory</td>
</tr>
<tr>
<td>SARA Section 313</td>
<td>Toxic Chemicals &amp; Release Reporting</td>
</tr>
<tr>
<td>SE</td>
<td>Single Exposure</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit</td>
</tr>
<tr>
<td>STOT</td>
<td>Specific Target Organ Toxicity</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
</tbody>
</table>

**Disclaimer:** The information contained herein is based on data taken from sources believed to be both current and reliable at the time of publication. Aremco Products, Inc. makes no warranty, expressed or implied, as to the accuracy of this MSDS and assumes no liability arising from its use by others. Compliance with all applicable Federal, State and Local laws and regulations remains the responsibility of the user.
SAFETY DATA SHEET

Product: 805-B
Revision Date: 6/01/2015

1. MATERIAL IDENTIFICATION

Product Name: Aremco-Bond 805-B Base Resin
Product Description: Epoxy Resin Mixture, Grey, Aromatic Odor
Product Use: High Performance Thermally Conductive Adhesive Resin
Manufacturer: Aremco Products, Inc.
707-B Executive Blvd.
Valley Cottage, NY 10989
Telephone: 845-268-0039
Emergency Phone: 845-268-0039 or Infotrac (24/7) 800-535-5053

2. HAZARDS IDENTIFICATION

GHS Classification:
Skin Irritation  Category 2
Skin Sensitization  Category 1
Eye Irritation  Category 2A
Mutagenic  Category 2
Carcinogenic  Category 2

GHS Label Elements:

GHS Signal Word:
Danger

GHS Hazard Determining Components:
Epoxy Phenol Novolac Resin
Reaction Product: Bisphenol-A-(Epichlorhydrin) Epoxy Resin (number average molecular weight <= 700)
n-Butyl Glycidyl Ether

GHS Hazard Statements for Health Hazards:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.

GHS Precautionary Statements - Prevention:
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear eye/face protection.
P281 Use personal protective equipment as required.

GHS Precautionary Statements – Response:
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs, get medical attention.
P362 Take off contaminated clothing and wash before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing.
P313+P337 If eye irritation persists, get medical attention.
P308+P313 IF exposed or concerned: Get medical advice/attention.

GHS Storage/Disposal:
P403+P235 Store in a well-ventilated place and keep cool.
P501 Dispose in accordance with local, regional, national or international regulations.
3. COMPOSITION

<table>
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<tr>
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<th>CAS No.</th>
<th>EC No.</th>
<th>Concentration</th>
<th>GHS Product Identifier</th>
</tr>
</thead>
</table>
| Epoxy Phenol Novolac Resin          | 25068-38-6  | 500-033-5  | 10.0-20.0%    | H315 Skin Corrosion/ Irritation, Cat 2  
                                    |             |            |               | H317 Sensitization, Skin, Cat 1  
                                    |             |            |               | H319 Eye Damage/Irritation, Cat 2A |
| Reaction Products: Bisphenol-A-     | 25068-38-6  | 500-033-5  | 10.0-20.0%    | H315 Skin Corrosion/ Irritation, Cat 2  
                                    | (Epichlorhydrin) Epoxy Resin (number average molecular weight <= 700) |           |               | H317 Sensitization, Skin, Cat 1  
                                    |             |            |               | H319 Eye Damage/Irritation, Cat 2A |
| n-Butyl Glycidyl Ether              | 2426-08-6   | 219-376-4  | 2.5-10.0%     | H315 Skin Corrosion/Irritation, Cat 2  
                                    |             |            |               | H317 Sensitization, Skin, Cat 1  
                                    |             |            |               | H319 Eye Damage/Irritation, Cat 2A  
                                    |             |            |               | H341 Germ Cell Mutagenicity, Cat 2  
                                    |             |            |               | H351 Carcinogenicity, Cat 2          |
| Aluminum Powder                     | 7429-90-5   | 231-072-3  | 40.0-60.0%    | H228 Flammable Solids, Cat 1  
                                    |             |            |               | H261 Substances & Mixtures Which, In  
                                    |             |            |               | Contact With Water, Emit Flam. Gases, Cat 3 |
| Calcium Carbonate                   | 471-34-1    | 207-439-9  | 10.0-25.0%    | None                                                 |

Note:
This product is a liquid mixture and all powders are encapsulated.

4. FIRST AID MEASURES

**Eye Exposure:**
Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If a physician is not immediately available, eye irrigation should be continued for an additional 15 minutes.

**Skin Exposure:**
Immediately wipe excess material off skin with a dry cloth then wash with plenty of soap and water for at least 5 minutes. See medical attention if irritation develops or persists. Remove contaminated clothing and shoes and clean thoroughly before re-use.

**Inhalation:**
Remove from immediate source of exposure and assure that victim is breathing. If not breathing, administer cardio-pulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Seek medical attention. Symptoms can be delayed several hours.

**Ingestion:**
If swallowed, do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of milk or water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention immediately. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give additional milk or water to further dilute the chemical.

5. FIRE FIGHTING MEASURES

**Flash Point:** 219 °F (104 °C) Closed Cup

**Flammable Limits:** Not available.

**Auto-Ignition Temperature:** Product is not self-igniting and does not represent an explosion hazard.

**Extinguishing Media:** Use carbon dioxide, dry chemical, foam, or water spray.

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and full chemical resistant protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Extreme heat or water contamination may cause closed containers to explode.

6. ACCIDENTAL RELEASE MEASURES

**Personal Protection:** Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. Use NIOSH approved respirator where mist occurs. Ensure adequate ventilation.

**Spill Cleanup:** Mop up liquid and absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust) and dispose in accordance with federal, state and local regulations or permits. Flush area with solvent then water to complete cleanup.
7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Keep container closed. Promptly clean residue from closures with cloth and solvent. Promptly clean up spills.

Storage: Store at room temperature in a dry, well ventilated area, away from combustible material, and away from ignition sources. Keep containers closed. Store in clean plastic or steel containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>TLV (mg/m³)</th>
<th>PEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl Glycidyl Ether</td>
<td>2426-08-6</td>
<td>219-376-4</td>
<td>16</td>
<td>270</td>
</tr>
</tbody>
</table>

Engineering Controls: Normal ventilation for good working conditions should be used. Keep containers closed. Safety shower and eyewash fountain should be within direct access.

Respiratory Protection: This product is not considered respirable in either the liquid or cured forms. However, if the cured product is polished, ground or chipped during processing, handling or use, powders may be released as airborne respirable particles. In these instances, appropriate personal protection equipment and local ventilation controls must be employed. If exposure limits are exceeded and local ventilation is unavailable, a supplied-air respirator or a self-contained NIOSH-approved vapor respirator is required.

Skin Protection: Wear body-covering protective clothing and gloves.

Eye Protection: Wear chemical goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid
Color: Grey
Odor: Aromatic Odor
Odor Threshold: Not Determined
pH: Not Determined
Melting Point Range: Not Determined
Boiling Point Range: Not Determined
Flash Point: 219 °F (104 °C) Closed Cup
Flammability (solid, gaseous): Not Applicable
Ignition Temperature: 419 °F (215 °C) Closed Cup
Decomposition Temperature: Not Determined
Auto Igniting: Product is not self-igniting

Danger of Explosion:
Explosion Limits
Lower: Not Determined
Upper: Not Determined
Vapor Pressure (mm Hg): < 1 @ 25 °C
Density: 1.89 g/cc @ 20 °C
Relative Density: Not Determined
Vapor Density: Not Determined
Evaporation Rate: Not Determined
Solubility in / Miscibility Water: Fully miscible
Partition Coefficient (n-Octanol/Water): Not Determined
Viscosity, Dynamic: Not Determined
Viscosity, Kinematic: Not Determined
Volatile Organic Compounds: 0.00 g/l

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal conditions of use and storage.
Conditions to Avoid: Avoid elevated temperatures.
Materials to Avoid: Strong acids, strong bases, strong oxidizers, amines, and mercaptans.
Hazardous Polymerization: May occur if mixed with amines in large masses and/or with heat.
Hazardous Decomposition Materials: Carbon monoxide and carbon dioxide.
11. TOXICOLOGICAL INFORMATION

**Acute Toxicity Data:**

<table>
<thead>
<tr>
<th>CAS#</th>
<th>n-Butyl Glycidyl Ether</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>2050 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>2520 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

**Primary Irritant Effect:**

- **On the Skin:** Irritant to skin and mucous membranes.
- **On the Eye:** Irritating effect.
- **Sensitization:** Sensitization is possible through skin contact.

**Carcinogenic Effects:** The product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

12. ECOLOGICAL INFORMATION

- **Aquatic Toxicity:** No further relevant information available.
- **Persistence & Degradability:** No further relevant information available.
- **Bioaccumulative Potential:** No further relevant information available.
- **Mobility in Soil:** No further relevant information available.
- **Ecotoxicity:** Harmful to fish.
- **General Notes:**
  - Water hazard class 2 (self-assessment); hazardous for water.
  - Do not allow product to reach ground water, water course or sewage system.
  - Danger to drinking water if even small quantities leak into the ground.
  - Harmful to aquatic organisms.

**Results of PBT & vPvB Assessment:**

- **PBT:** Not applicable.
- **VPvB:** Not applicable

**Other Adverse Effects:** No further information available.

13. DISPOSAL CONSIDERATIONS

**Disposal:**

Keep out of surface waters, sewers, and waterways entering or leading to surface waters. Notify authorities if any exposure to the environment occurs or is likely to occur. Utilize an appropriate disposal facility, in compliance with federal, state and local environmental control regulations.

14. TRANSPORTATION INFORMATION

**DOT UN Status:**

The material is not a regulated hazardous material for transportation.

15. REGULATORY INFORMATION

**U.S. Federal Regulations**

- **CERCLA:** No CERCLA reportable quantity has been established for this material.
- **TSCA:** All ingredients of this material are listed on the TSCA inventory.
- **SARA Title III**

**Sections 302, 304, 313:** This product does not contain any substances reportable under these sections.

**Sections 311, 312:**

<table>
<thead>
<tr>
<th>Hazard Classes</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Immediate Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Delayed Hazard</td>
<td>No</td>
</tr>
<tr>
<td>International Inventory</td>
<td>Status</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Canada (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe (EINECS/ELINCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan (MITI)</td>
<td>Yes</td>
</tr>
<tr>
<td>South Korea (KECL)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Ratings (scale 0 – 4)</th>
<th>Health, 1</th>
<th>Flammability, 1</th>
<th>Reactivity, 0</th>
<th>Personal Protection, H</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS Ratings (scale 0 – 4)</td>
<td>Health, 1</td>
<td>Flammability, 1</td>
<td>Reactivity, 0</td>
<td>Personal Protection, H</td>
</tr>
</tbody>
</table>

#### Key Legend Information

- **ACGIH**: American Conference of Governmental Industrial Hygienists
- **ARD**: International Agency for Research on Cancer
- **CAS**: Chemical Abstract Service
- **CERCLA**: Comprehensive Environmental Response, Compensation & Liability Act
- **DSL**: Domestic Substance List
- **EC**: European Commission
- **HMIS**: Hazardous Materials Identification System
- **IARC**: International Agency for Research on Cancer
- **ND**: Not Determined
- **NE**: Not Established
- **NFPA**: National Fire Protection Association
- **NIOSH**: National Institute for Occupational Safety & Health
- **NTP**: National Toxicology Program
- **OSHA**: Occupational Safety and Health Administration
- **PEL**: Permissible Exposure Limit
- **RE**: Repeat Exposure
- **SARA**: Superfund Amendments & Reauthorization Act
- **SARA Title III**: Emergency Planning & Community Right to Know Act
- **SARA Section 302**: Extremely Hazardous Substances
- **SARA Section 304**: Emergency Release
- **SARA Section 311**: MSDS/List of Chemicals & Hazardous Inventory
- **SARA Section 312**: Emergency & Hazardous Inventory
- **SARA Section 313**: Toxic Chemicals & Release Reporting
- **SE**: Single Exposure
- **STEL**: Short Term Exposure Limit
- **STOT**: Specific Target Organ Toxicity
- **TLV**: Threshold Limit Value
- **TWA**: Time Weighted Average

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