# SECTION 1: Identification

## 1.1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>ALLYL GLYCIDYL ETHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>ENEA0080</td>
</tr>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Formula</td>
<td>C6H10O2</td>
</tr>
<tr>
<td>Synonyms</td>
<td>2-(ALLYLOXYMETHYL)OXIRANE</td>
</tr>
<tr>
<td></td>
<td>1,2-EPOXY-3-ALLYLOXYPROPANE</td>
</tr>
<tr>
<td></td>
<td>([2-PROPENYLOXY]METHYL)OXIRANE</td>
</tr>
<tr>
<td></td>
<td>1-(2-PROPENYLOXY)-2,3-EPOXYPROPANE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>EPOXY COMPOUND</td>
</tr>
</tbody>
</table>

## 1.2. Recommended use and restrictions on use

**Recommended use:** Chemical intermediate

## 1.3. Supplier

**GELEST, INC.**
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

## 1.4. Emergency telephone number

**Emergency number:** CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

# SECTION 2: Hazard(s) identification

## 2.1. Classification of the substance or mixture

**GHS-US classification**

| Flammable liquids Category | 3 |
| Acute toxicity (oral) Category | 4 |
| Acute toxicity (inhalation/vapor) Category | 3 |
| Skin sensitization, Category | 1 |
| Germ cell mutagenicity Category | 2 |
| Reproductive toxicity Category | 2 |
| Specific target organ toxicity (single exposure) Category | 3 |
| Hazardous to the aquatic environment - Acute Hazard Category | 3 |

Full text of H statements: see section 16

## 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**

### Hazard pictograms (GHS US):

- Flammable liquid
- Skull and crossbones
- Exclamation mark
- Biohazard symbol

**Signal word (GHS US):** Danger

**Hazard statements (GHS US):**

- H226 - Flammable liquid and vapor
- H302 - Harmful if swallowed
- H317 - May cause an allergic skin reaction
- H331 - Toxic if inhaled
- H335 - May cause respiratory irritation
- H341 - Suspected of causing genetic defects
- H361 - Suspected of damaging fertility or the unborn child
- H355 - May cause reproductive toxicity
- H402 - Harmful to aquatic life

**Precautionary statements (GHS US):**

- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 - If exposed or concerned: Get medical advice/attention.
- P210 - Keep away from heat, open flames, sparks. - No smoking.
- P240 - Ground/Bond container and receiving equipment.
- P241 - Use explosion-proof electrical equipment.
- P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing vapors.
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 must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P355 - In case of fire: Use water spray or fog, foam, carbon dioxide, dry chemical to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P233 - Keep container tightly closed.
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Substance type : Mono-constituent
Name : ALLYL GLYCIDYL ETHER
CAS-No. : 106-92-3

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl glycidyl ether</td>
<td>(CAS-No.) 106-92-3</td>
<td>95</td>
<td>100 Flam. Liq. 3, H226</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 (Inhalation:vapour), H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1, H317</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Muta. 2, H341</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rep. 2, H361</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
First-aid measures after skin contact : Wash with plenty of soap and water. Get medical advice/attention.
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after inhalation : May cause respiratory irritation. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available

Print date: 04/10/2019
EN (English US)  SDS ID: ENEA0080 2/8
SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Unsuitable extinguishing media: Do not use straight streams.

5.2. Specific hazards arising from the chemical
Fire hazard: Flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Eliminate ignition sources. Use special care to avoid static electric charges.
6.1.1. For non-emergency personnel
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.
6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Additional hazards when processed: Keep away from heat, open flames, sparks. - No smoking.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent accumulation of vapors. Take precautionary measures against static discharge. Use only non-sparking tools.
Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up.
Incompatible materials: Oxidizing agent.
Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (ppm)</th>
<th>OSHA PEL (Ceiling) (mg/m³)</th>
<th>OSHA PEL (Ceiling) (ppm)</th>
<th>US IDLH (ppm)</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl glycidyl ether (106-92-3)</td>
<td>1 ppm</td>
<td>45 mg/m³</td>
<td>10 ppm</td>
<td>50 ppm</td>
<td>22 mg/m³</td>
</tr>
</tbody>
</table>
### 8.2. Appropriate engineering controls

**Appropriate engineering controls**: Handle in an enclosing hood with exhaust ventilation.

### 8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment**: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

**Hand protection**: Neoprene or nitrile rubber gloves

**Eye protection**: Chemical goggles. Contact lenses should not be worn

**Skin and body protection**: Wear suitable protective clothing

**Respiratory protection**: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>114.14 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Straw.</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.433</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-65 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>154 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>57 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>4.7 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.962</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&lt; 3 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
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</tbody>
</table>

#### 9.2. Other information

No additional information available
null
ALLYL GLYCIDYL ETHER
Safety Data Sheet

<table>
<thead>
<tr>
<th>Allyl glycidyl ether (106-92-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>30 mg/l (Goldfish)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on the ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Sewage disposal recommendations : Do not dispose of waste into sewer.
Product/Packaging disposal recommendations : Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
UN-No. (DOT) : 2219
DOT NA no. : UN2219

14.2. UN proper shipping name
Transport document description : UN2219 Allyl glycidyl ether, 3, III
Proper Shipping Name (DOT) : Allyl glycidyl ether
Class (DOT) : 3 - Class 3 : Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Packaging Exceptions (49 CFR 173.xxx) : 150

14.3. Additional information
Emergency Response Guide (ERG) Number : 129
Other information : No supplementary information available.

Transport by sea
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

SECTION 15: Regulatory information

15.1. US Federal regulations

Allyl glycidyl ether (106-92-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
15.2. International regulations

CANADA

**Allyl glycidyl ether (106-92-3)**

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

| Class B Division 3 - Combustible Liquid |
| Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects |
| Class D Division 2 Subdivision B - Toxic material causing other toxic effects |

EU-Regulations

**Allyl glycidyl ether (106-92-3)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

**Allyl glycidyl ether (106-92-3)**

- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Japanese Pollutant Release and Transfer Register Law (PRTR Law)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

**Allyl glycidyl ether (106-92-3)**

- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

- **H226**: Flammable liquid and vapor
- **H302**: Harmful if swallowed
- **H317**: May cause an allergic skin reaction
- **H331**: Toxic if inhaled
- **H335**: May cause respiratory irritation
- **H341**: Suspected of causing genetic defects
- **H361**: Suspected of damaging fertility or the unborn child
- **H402**: Harmful to aquatic life

Abbreviations and acronyms:

| Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor. |
| Hazard Rating: Health |
| Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given |
| Flammability: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA) |
| Physical: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors. |

Prepared by safety and environmental affairs.
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