# SECTION 1: Identification

## 1.1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>ENEA0180</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>C8H16O3</td>
</tr>
<tr>
<td>Synonyms</td>
<td>ALLYL ALCOHOL ETHOXYLATE, METHYL ETHER (EO = 2); 3- (METHOXYETHOXYETHOXY)PROPENE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>POLYETHER</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 H226 Flammable liquid and vapor
- Acute toxicity (oral) Category 4 H302 Harmful if swallowed

Full text of H statements: see section 16

## 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**

<table>
<thead>
<tr>
<th>Hazard pictograms (GHS US)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image" alt="Flammable Liquid" /> <img src="image" alt="Warning" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signal word (GHS US)</th>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard statements (GHS US)</td>
<td>H226 - Flammable liquid and vapor H302 - Harmful if swallowed</td>
</tr>
</tbody>
</table>

## 2.3. Hazards not otherwise classified (HNOC)

No additional information available
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95
Safety Data Sheet

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyloxy(diethylene oxide), methyl ether</td>
<td>(CAS-No.) 13752-97-1</td>
<td>&gt; 95</td>
<td>Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td>Allyloxy(triethylene oxide), methyl ether</td>
<td>(CAS-No.) 19685-21-3</td>
<td>&lt; 5</td>
<td>Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td>Allyl alcohol</td>
<td>(CAS-No.) 107-18-6</td>
<td>&lt; 0.01</td>
<td>Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Acute Tox. 1 (Inhalation:vapour), H330 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Acute 1, H400</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. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water.

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. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation: No information available.
Symptoms/effects after skin contact: May cause skin irritation.
Symptoms/effects after eye contact: May cause 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

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


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.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
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: Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.
6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

6.2. Environmental precautions

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

Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. 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

Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. 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 hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities


SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH TWA (ppm)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>OSHA PEL (TWA) (ppm)</th>
<th>US IDLH (ppm)</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
<th>NIOSH REL (TWA) (ppm)</th>
<th>NIOSH REL (STEL) (mg/m³)</th>
<th>NIOSH REL (STEL) (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl alcohol (107-18-6)</td>
<td>0.5 ppm</td>
<td>5 mg/m³</td>
<td>2 ppm</td>
<td>20 ppm</td>
<td>5 mg/m³</td>
<td>2 ppm</td>
<td>10 mg/m³</td>
<td>4 ppm</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls: Provide local exhaust or general room 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:
NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95

Safety Data Sheet

Appearance: Clear liquid.
Molecular mass: 160.21 g/mol
Color: Pale yellow.
Odor: No data available
Odor threshold: No data available
Refractive index: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: < 0 °C
Boiling point: 40 - 60 °C @ 0.5 mm Hg
Flash point: > 40 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Flammable liquid and vapor
Vapor pressure: < 0.01 mm Hg @ 20°C
Relative vapor density at 20 °C: > 1
Relative density: 0.916
% Volatiles: < 3 %
Solubility: Slightly. Soluble in water.
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosion limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials
Oxidizing agent.

10.6. Hazardous decomposition products
Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95 (13752-97-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allyl alcohol (107-18-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 oral mouse</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
</tr>
</tbody>
</table>
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95
Safety Data Sheet

<table>
<thead>
<tr>
<th>Allyl alcohol (107-18-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (vapors)</td>
<td>0.391 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>0.391 mg/l/4h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allyloxy(diethylene oxide), methyl ether (13752-97-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1500 mg/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allyloxy(triethylene oxide), methyl ether (19685-21-3)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1500 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosi
on/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : No information available.
Symptoms/effects after skin contact : May cause skin irritation.
Symptoms/effects after eye contact : May cause eye irritation.
Symptoms/effects after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Allyl alcohol (107-18-6)

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>0.28 - 0.37 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 2</td>
<td>0.32 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Allyl alcohol (107-18-6)

<table>
<thead>
<tr>
<th>BCF fish 1</th>
<th>(no bioaccumulation expected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>0.17</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.
Effect on the ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

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

<table>
<thead>
<tr>
<th>UN-No.(DOT)</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT NA no.</td>
<td>UN1993</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name

Transport document description : UN1993 Flammable liquids, n.o.s. (ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER), 3, III
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95
Safety Data Sheet

Proper Shipping Name (DOT) : Flammable liquids, n.o.s. (ALLYLOXY(DIETHYLENE OXIDE), METHYL 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
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information
Emergency Response Guide (ERG) Number : 128
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
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95 (13752-97-1)
TSCA Exemption/Exclusion : Low Volume Exemption in accordance with 40 CFR 723.50(c)(1). Anyone who intends to use this chemical substance for commercial purposes must comply with specific use restrictions and controls specified herein. This LVE limits site of manufacture of this substance to Gelest, Inc. unless otherwise approved by U.S. EPA

Allyl alcohol (107-18-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States SARA Section 302
Subject to reporting requirements of United States SARA Section 313
SARA Section 302 Threshold Planning Quantity (TPQ) : 1000
SARA Section 313 - Emission Reporting : 1 %

Allyloxy(diethylene oxide), methyl ether (13752-97-1)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Allyloxy(triethylene oxide), methyl ether (19685-21-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
Allyl alcohol (107-18-6)
Listed on the Canadian DSL (Domestic Substances List)
WHMIS Classification : Class B Division 2 - Flammable 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

Allyloxy(triethylene oxide), methyl ether (19685-21-3)
Listed on the Canadian NDSL (Non-Domestic Substances List)
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95

Safety Data Sheet

Allyl alcohol (107-18-6)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

 Allyloxy(triethylene oxide), methyl ether (19685-21-3)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Allyl alcohol (107-18-6)
- 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 Poisonous and Deleterious Substances Control Law
- 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 alcohol (107-18-6)
- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
- U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information
Full text of H-phrases:

H225 Highly flammable liquid and vapor
H226 Flammable liquid and vapor
H227 Combustible liquid
H301 Toxic if swallowed
H302 Harmful if swallowed
H310 Fatal in contact with skin
H315 Causes skin irritation
H319 Causes serious eye irritation
H330 Fatal if inhaled
H335 May cause respiratory irritation
H400 Very toxic 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; EC Index No.: European Commission Index 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
- 2 Moderate Hazard - Temporary or minor injury may occur

Flammability
- 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F, as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical
- 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

Date of issue: 12/09/2014 Version: 1.0

SDS US (GHS HazCom 2012) - Custom
Print date: 04/10/2019 EN (English US) SDS ID: ENEA0180
ALLYLOXY(DIETHYLENE OXIDE), METHYL ETHER, tech-95
Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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