# Safety Data Sheet

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier
- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%
- **Product code**: ENEA0375
- **Formula**: C10H20O4
- **Synonyms**: 2,5,8,11-TETRAOXATETRADEC-13-ENE; ALLYL ALCOHOL ETHOXYLATE, METHYL ETHER (EO = 3)
- **Chemical family**: POLYETHER

### 1.2. Relevant identified uses of the substance or mixture and uses advised against
- **Use of the substance/mixture**: Chemical intermediate
- **Use advised against**: For research and industrial use only

### 1.3. Details of the supplier of the safety data sheet
- **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: Hazards identification

### 2.1. Classification of the substance or mixture
- **Classification (GHS-US)**
  - Flam. Liq.: 4 - H227
  - Acute Tox. 4 (Oral): H302
- **Full text of H-phrases: see section 16**

### 2.2. Label elements
- **GHS-US labeling**
  - **Hazard pictograms (GHS-US)**: ![GHS07]

- **Signal word (GHS-US)**: Warning
- **Hazard statements (GHS-US)**: H227 - Combustible liquid
- **Precautionary statements (GHS-US)**: P280 - Wear protective gloves/protective clothing/eye protection/face protection
- **P201 - Keep away from heat, open flames, sparks. - No smoking
- **P270 - Do not eat, drink or smoke when using this product
- **P330 - Rinse mouth
- **P301+P312 - If swallowed: Call a doctor if you feel unwell
- **P370+P378 - In case of fire: Use water spray or fog, foam, carbon dioxide, dry chemical to extinguish
- **P403+P235 - Keep in a cool place
- **P501 - Dispose of contents/container to licensed waste disposal facility.**

### 2.3. Other hazards
- No additional information available

### 2.4. Unknown acute toxicity (GHS-US)
- No data available
ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%
Safety Data Sheet

SECTION 3: Composition/information on ingredients

3.1. Substance
Substance type: Multi-constituent
Name: ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%
CAS No: 19685-21-3
EC no: 243-224-6

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyloxy(triethylene oxide), methyl ether</td>
<td>(CAS No) 19685-21-3</td>
<td>&gt; 95</td>
<td>Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td>Allyloxy(diethylene oxide), methyl ether</td>
<td>(CAS No) 13752-97-1</td>
<td>&lt; 5</td>
<td>Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td>Allyloxy(tetraethylene oxide), methyl ether</td>
<td>(CAS No) 96220-75-6</td>
<td>&lt; 5</td>
<td>Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302</td>
</tr>
</tbody>
</table>

3.2. Mixture
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 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, both acute and delayed
Symptoms/injuries after inhalation: No information available.
Symptoms/injuries after skin contact: May cause skin irritation.
Symptoms/injuries after eye contact: May cause eye irritation.
Symptoms/injuries after ingestion: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Fire hazard: Combustible liquid. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
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.
### SECTION 6: 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.

### 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. 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

Technical measures: Ground/bond container and receiving equipment.

Storage conditions: Keep container tightly closed. May freeze if stored <0°C.

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

No additional information available.

#### 8.2. Exposure controls

**Appropriate engineering controls:** Provide local exhaust or general room ventilation.

**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

**Appearance:** Clear liquid.

**Molecular mass:** 204.26 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:** 75 - 85 °C @ 0.5 mm Hg

**Flash point:** 80 °C

**Auto-ignition temperature:** No data available

**Decomposition temperature:** No data available

**Flammability (solid, gas):** Combustible liquid

**Vapor pressure:** < 0.1 mm Hg @ 20°C

**Relative vapor density at 20°C:** > 1

**Relative density:** 0.957

**VOC content:** < 3 %

**Solubility:** Slightly. Soluble in water.

**Log Pow:** No data available

**Log Kow:** No data available
ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%
Safety Data Sheet

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Oral: Harmful if swallowed.</th>
</tr>
</thead>
</table>

### ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95% (19685-21-3)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
<td>1578.947 mg/kg body weight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyloxy(diethylene oxide), methyl ether (13752-97-1)</td>
<td>1500 mg/kg (data for PEG 2-6) analogs</td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>1500 mg/kg (data for PEG 2-6) analogs</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>1500.000 mg/kg body weight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyloxy(tetraethylene oxide), methyl ether (96220-75-6)</td>
<td>1500 mg/kg (data for PEG 2-6) analogs</td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>1500 mg/kg (data for PEG 2-6) analogs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/injuries after inhalation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Symptoms/injuries after skin contact</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Symptoms/injuries after eye contact</td>
<td>May cause eye irritation.</td>
</tr>
<tr>
<td>Symptoms/injuries after ingestion</td>
<td>Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available
ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%
Safety Data Sheet

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 ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste 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
DOT NA no. NA1993

14.2. UN proper shipping name
Proper Shipping Name (DOT) : Combustible liquid, n.o.s. (ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER)
Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
Packing group (DOT) : III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241

14.3. Additional information
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 (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

Allyloxy(tetraethylene oxide), methyl ether (96220-75-6)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

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

Allyloxy(tetraethylene oxide), methyl ether (96220-75-6)

15.3. US State regulations

ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%(19685-21-3)

U.S. - California - Proposition 65 - Carcinogens List : No
U.S. - California - Proposition 65 - Developmental : No
ALLYLOXY(TRIETHYLENE OXIDE), METHYL ETHER, 95%
Safety Data Sheet

---

### Toxicity

<table>
<thead>
<tr>
<th>Category</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyloxy(diethylene oxide), methyl ether (19685-21-3)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Allyloxy(tetraethylene oxide), methyl ether (96220-75-6)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### Section 16: Other Information

#### 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.

#### Full text of H-phrases:
- **Acute Tox. 4 (Oral)**: Acute toxicity (oral) Category 4
- **Flam. Liq. 3**: Flammable liquids Category 3
- **Flam. Liq. 4**: Flammable liquids Category 4
- **H226**: Flammable liquid and vapor
- **H227**: Combustible liquid
- **H302**: Harmful if swallowed

#### HMIS III Rating
- **Health**: 2 Moderate Hazard - Temporary or minor injury may occur
- **Flammability**: 2 Moderate Hazard
- **Physical**: 0 Minimal Hazard

Prepared by safety and environmental affairs.

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

SDS US (GHS HazCom 2012) - Custom

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