## SECTION 1: Identification

### 1.1. Identification
- **Product name**: ALLYL CHLORIDE
- **Product code**: ENEA0070
- **Product form**: Substance
- **Physical state**: Liquid
- **Formula**: C₃H₅Cl
- **Synonyms**: 3-CHLOROPROPENE; 2-PROPYL CHLORIDE
- **Chemical family**: ESTER

### 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 3**: H301 - Toxic if swallowed
- **Acute toxicity (inhalation/vapor) Category 4**: H332 - Harmful if inhaled
- **Skin corrosion/irritation Category 2**: H315 - Causes skin irritation
- **Serious eye damage/eye irritation Category 2A**: H319 - Causes serious eye irritation
- **Hazardous to the aquatic environment - Acute Hazard Category 3**: H402 - Harmful to aquatic life
- Full text of H statements: see section 16

### 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**
- **Hazard pictograms (GHS US)**: ![Flammable](image1), ![Toxic](image2), ![Harmful](image3)

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

- **Hazard statements (GHS US)**
  - H226 - Flammable liquid and vapor
  - H301 - Toxic if swallowed
  - H315 - Causes skin irritation
  - H319 - Causes serious eye irritation
  - H332 - Harmful if inhaled
  - H402 - Harmful to aquatic life

- **Precautionary statements (GHS US)**
  - P210 - Keep away from heat, open flames, sparks. - No smoking.
  - P233 - Keep container tightly closed.
  - 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, mist.
  - 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.
  - P273 - Avoid release to the environment.
  - P280 - Wear eye protection, protective clothing, protective gloves.
  - P301+P310 - If swallowed: Immediately call a doctor
  - P302+P352 - If on skin: Wash with plenty of soap and water
  - P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. Rinse
ALLYL CHLORIDE
Safety Data Sheet

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

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Name</th>
<th>CAS-No.</th>
<th>Product identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mono-constituent</td>
<td>Allyl Chloride</td>
<td>107-05-1</td>
<td>(CAS-No.) 107-05-1</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 immediate medical advice/attention.

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

Symptoms/effects after inhalation : Harmful if inhaled. Danger of serious damage to health by prolonged exposure through inhalation.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes eye irritation.

Symptoms/effects after ingestion : Toxic if swallowed.

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 : Highly 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.
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 every possible source of ignition. Use special care to avoid static electric charges. Remove ignition sources. No open flames. No smoking.

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. Avoid release to the environment.

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: Use only non-sparking tools. Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal.

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: Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Use only outdoors or in a well-ventilated area. Avoid breathing vapors. Provide good ventilation in process area to prevent accumulation of vapors. Use only non-sparking tools.

Hygiene measures: Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed.

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>Allyl Chloride (107-05-1)</th>
<th>ACGIH TWA (ppm)</th>
<th>1 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>2 ppm</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>1 ppm</td>
</tr>
<tr>
<td>IDLH</td>
<td>US IDLH (ppm)</td>
<td>250 ppm</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (TWA) (ppm)</td>
<td>1 ppm</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (STEL) (mg/m³)</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>NIOSH REL (STEL) (ppm)</td>
<td>2 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:**
Wear respiratory protection. NIOSH-certified combination organic vapor/acid gas (yellow 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>76.52 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Straw yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.414</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>7</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-130 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>44 - 46 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>31 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>485 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>295 mm Hg</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>2.6</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.939</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>100 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water. Slightly.</td>
</tr>
<tr>
<td>Water</td>
<td>0.36 %</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>2.9 - 11.2 vol % (lower; upper)</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
10.6. Hazardous decomposition products
Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

**ALLYL CHLORIDE (107-05-1)**

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>120 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>120 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>11.224 mg/l/4h</td>
</tr>
</tbody>
</table>

**Allyl Chloride (107-05-1)**

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>450 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>2026 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>11 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>450 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>2026 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>11 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>11 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Mouse feeding and inhalation studies classify this material as an equivocal tumorigenic agent.
(RTECS UC7350000/UC7026FO)

**Allyl Chloride (107-05-1)**

<table>
<thead>
<tr>
<th>IARC group</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Not classifiable</td>
<td></td>
</tr>
</tbody>
</table>

Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Potential Adverse human health effects and symptoms : Harmful if inhaled. Toxic if swallowed.
Symptoms/effects after inhalation : Harmful if inhaled. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes eye irritation.
Symptoms/effects after ingestion : Toxic if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Ecology - water : Harmful to aquatic life.

**Allyl Chloride (107-05-1)**

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>14.97 - 24.78 mg/l</td>
</tr>
<tr>
<td>(Exposure time: 96 h</td>
<td></td>
</tr>
<tr>
<td>Species: Pimephales</td>
<td></td>
</tr>
<tr>
<td>promelas [static])</td>
<td></td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>33.52 - 53.47 mg/l</td>
</tr>
<tr>
<td>(Exposure time: 96 h</td>
<td></td>
</tr>
<tr>
<td>Species: Lepomis</td>
<td></td>
</tr>
<tr>
<td>macrochirus [static])</td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

**Allyl Chloride (107-05-1)**

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>2.1</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available
12.5. Other adverse effects
Other adverse effects: Harmful to aquatic life if released to open waters.
Effect on the ozone layer: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
UN-No.(DOT) : 1100
DOT NA no. : UN1100

14.2. UN proper shipping name
Transport document description : UN1100 Allyl chloride, 3 (6.1), I
Proper Shipping Name (DOT) : Allyl chloride
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : I - Great Danger
Hazard labels (DOT) : 3 - Flammable liquid
6.1 - Poison

DOT Packaging Non Bulk (49 CFR 173.xxx) : 201
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Packaging Exceptions (49 CFR 173.xxx) : None

14.3. Additional information
Emergency Response Guide (ERG) Number : 131
Other information: No supplementary information available.

Transport by sea
DOT Vessel Stowage Location : E - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”

Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

SECTION 15: Regulatory information

15.1. US Federal regulations
Allyl Chloride (107-05-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
SARA Section 313 - Emission Reporting : 1 %

15.2. International regulations
CANADA
ALLYL CHLORIDE
Safety Data Sheet

Allyl Chloride (107-05-1)
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

EU-Regulations
Allyl Chloride (107-05-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations
Allyl Chloride (107-05-1)
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)
Listed on CICR (Turkish Inventory and Control of Chemicals)

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 Chloride (107-05-1)
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:

<table>
<thead>
<tr>
<th>H225</th>
<th>Highly flammable liquid and vapor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>

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 : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
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: 06/25/2015 Revision date: 10/23/2018 Version: 1.1
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2019 Gelest Inc. Morrisville, PA 19067