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

1.1 Product identifiers

Product name : Allyl bromide
Product Number : A29585
Brand : Aldrich
CAS-No. : 106-95-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
            3050 SPRUCE ST
            ST. LOUIS MO  63103
            UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

- Flammable liquids (Category 2), H225
- Acute toxicity, Oral (Category 3), H301
- Acute toxicity, Inhalation (Category 3), H331
- Skin corrosion (Category 1B), H314
- Serious eye damage (Category 1), H318
- Germ cell mutagenicity (Category 1B), H340
- Carcinogenicity (Category 1B), H350
- Short-term (acute) aquatic hazard (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.
2.2 GHS Label elements, including precautionary statements

Pictogram

<table>
<thead>
<tr>
<th>Signal Word</th>
<th>Danger</th>
</tr>
</thead>
</table>

Hazard statement(s)

- H225: Highly flammable liquid and vapor.
- H301 + H331: Toxic if swallowed or if inhaled.
- H314: Causes severe skin burns and eye damage.
- H340: May cause genetic defects.
- H350: May cause cancer.
- H400: Very toxic to aquatic life.

Precautionary statement(s)

- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P261: Avoid breathing mist or vapors.
- P264: Wash skin thoroughly after handling.
- P265: Avoid breathing mist or vapors.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P272: Avoid release to the environment.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P308 + P313: IF EXPOSED OR CONCERNED: Get medical advice/ attention.
- P363: Wash contaminated clothing before reuse.
- P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- P391: Collect spillage.
- P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- P403 + P235: Store in a well-ventilated place. Keep cool.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>3-Bromo-1-propene</th>
</tr>
</thead>
</table>

| Formula                     | C₃H₅Br           |
| Molecular weight            | 120.98 g/mol      |
| CAS-No.                     | 106-95-6          |
| EC-No.                      | 203-446-6         |

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-bromo-1-propene</td>
<td>Flam. Liq. 2; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; H225, H301, H331, H314, H318, H400 M-Factor - Aquatic Acute: 10</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>propylene oxide</td>
<td>Flam. Liq. 1; Acute Tox. 4; Acute Tox. 3; Eye Irrit. 2A; Muta. 1B; Carc. 1B; STOT SE 3; Aquatic Acute 3; H224, H302, H331, H311, H319, H340, H350, H335, H402</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Hydrogen bromide gas
Flash back possible over considerable distance., Container explosion may occur under fire conditions. Combustible.
Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage stability
Recommended storage temperature
2 - 8 °C

Moisture sensitive. Light sensitive.

Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-bromo-1-propene</td>
<td>106-95-6</td>
<td>TWA</td>
<td>0.1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>propylene oxide</td>
<td>75-56-9</td>
<td>TWA</td>
<td>2 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**Remarks**
- Not classifiable as a human carcinogen
- Danger of cutaneous absorption
- Dermal Sensitization
- Confirmed animal carcinogen with unknown relevance to humans
- Potential Occupational Carcinogen

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>100 ppm 240 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEL</td>
<td>2 ppm 4.75 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**8.2 Exposure controls**

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
Material: Viton®
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 120 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

**Body Protection**
Flame retardant antistatic protective clothing.

**Respiratory protection**
Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains. Risk of explosion.

---

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

- **Appearance**
  - Form: liquid
- **Odor**
  - No data available
- **Odor Threshold**
  - No data available
- **pH**
  - No data available
- **Melting point/freezing point**
  - Melting point/range: -119 °C (-182 °F)
- **Initial boiling point and boiling range**
  - 70 - 71 °C 158 - 160 °F
- **Flash point**
  - -1 °C (30 °F) - c.c.
- **Evaporation rate**
  - No data available
- **Flammability (solid, gas)**
  - No data available
- **Upper/lower flammability or explosive limits**
  - Upper explosion limit: 7.3 % (V)
  - Lower explosion limit: 4.4 % (V)
k) Vapor pressure  No data available 

l) Vapor density  No data available 

m) Density  1.398 g/mL at 25 °C (77 °F) 
   Relative density  No data available 

n) Water solubility  0.382 g/l at 25 °C (77 °F) - soluble 

o) Partition coefficient: n-octanol/water  No data available 

p) Autoignition temperature  No data available 

q) Decomposition temperature  No data available 

r) Viscosity  No data available 

s) Explosive properties  No data available 

t) Oxidizing properties  none 

9.2 Other safety information 
No data available 

SECTION 10: Stability and reactivity 

10.1 Reactivity 
Vapors may form explosive mixture with air. 

10.2 Chemical stability 
The product is chemically stable under standard ambient conditions (room temperature). 
Contains the following stabilizer(s): propylene oxide (<=0.1 %) 

10.3 Possibility of hazardous reactions 
Violent reactions possible with: 
Exothermic reaction with: 
Oxidizing agents 
Alkali metals 
Alkaline earth metals 
Light metals 
amides 
Amines 
Powdered metals 

10.4 Conditions to avoid 
May polymerize on exposure to light. Exposure to moisture. Exposure to air. 
Warming. 

10.5 Incompatible materials 
No data available 

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The life science business of Merck KGaA, Darmstadt, Germany 
operates as MilliporeSigma in the US and Canada
10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Acute toxicity estimate Oral - 200 mg/kg
(Calculation method)
LD50 Oral - Rat - male and female - 200 mg/kg
(OECD Test Guideline 401)
Acute toxicity estimate Inhalation - 4 h - 2.41 mg/l - vapor (Calculation method)

LC50 Inhalation - Rat - male and female - 4 h - 2.41 mg/l - vapor
(OECD Test Guideline 403)
Inhalation: Corrosive to respiratory system.
Acute toxicity estimate Dermal - > 5,000 mg/kg
(Calculation method)

Skin corrosion/irritation
Skin - Rabbit
Result: Causes burns.
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Remarks: Causes serious eye damage.

Respiratory or skin sensitization
Freund's complete adjuvant test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: Ames test
Test system: S. typhimurium
Metabolic activation: with and without metabolic activation
Method: US-EPA
Result: positive

Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Method: US-EPA
Result: negative

Carcinogenicity
IARC: 2B - Group 2B: Possibly carcinogenic to humans (propylene oxide)
NTP: RAHC - Reasonably anticipated to be a human carcinogen (propylene oxide)
OSHA: No component of this product present at levels greater than or equal to 0.1% is
on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information

RTECS: UC7090000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption:

- Headache
- Drowsiness
- Unconsciousness
- cardiovascular disorders
- narcosis

Absorption may result in damage of the following:

- Liver
- Kidney

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

**Stomach - Irregularities - Based on Human Evidence**

**Stomach - Irregularities - Based on Human Evidence**

### SECTION 12: Ecological information

#### 12.1 Toxicity

**Toxicity to fish**

- static test LC50 - Carassius auratus (goldfish) - 0.8 mg/l - 24 h
  Remarks: (ECHA)

**Toxicity to algae**

- static test EC50 - Pseudokirchneriella subcapitata - 0.087 mg/l - 72
12.2 **Persistence and degradability**

*Biodegradability*

Result: Readily biodegradable.

Remarks: (External MSDS)

12.3 **Bioaccumulative potential**

No data available

12.4 **Mobility in soil**

No data available

12.5 **Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 **Endocrine disrupting properties**

No data available

12.7 **Other adverse effects**

Biological effects:

Forms toxic mixtures in water, dilution measures notwithstanding. Discharge into the environment must be avoided.

---

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**

*Product*

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

---

**SECTION 14: Transport information**

**DOT (US)**

UN number: 1099  
Class: 3 (6.1)  
Packing group: I  
Proper shipping name: Allyl bromide  
Reportable Quantity (RQ):  
Marine pollutant: yes  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1099  
Class: 3 (6.1)  
Packing group: I  
EMS-No: F-E, S-D  
Proper shipping name: ALLYL BROMIDE  
Marine pollutant: yes

Aldrich - A29585

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada
IATA
UN number: 1099  Class: 3 (6.1)  Packing group: I
Proper shipping name: Allyl bromide
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

SECTION 15: Regulatory information

**SARA 302 Components**
This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene oxide</td>
<td>75-56-9</td>
<td>2008-11-03</td>
</tr>
</tbody>
</table>

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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<tbody>
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<td>106-95-6</td>
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<tr>
<td>propylene oxide</td>
<td>75-56-9</td>
<td>2008-11-03</td>
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**Pennsylvania Right To Know Components**

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<td>75-56-9</td>
<td>2008-11-03</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**
, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

<table>
<thead>
<tr>
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<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene oxide</td>
<td>75-56-9</td>
<td>2007-09-28</td>
</tr>
</tbody>
</table>
SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Version: 6.6  
Revision Date: 11/22/2023  
Print Date: 01/13/2024