1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Allyl bromide
Product Number : 337528
Brand : Aldrich
Supplier : Sigma-Aldrich Corporation
            3050 Spruce Street
            SAINT LOUIS MO 63103
            USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Carcinogen, Target Organ Effect, Toxic by ingestion, Corrosive

Target Organs
Liver, Kidney

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 3)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 1B)
Carcinogenicity (Category 1B)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger
Hazard statement(s)
H225 : Highly flammable liquid and vapour.
H301 : Toxic if swallowed.
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.
P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P273 : Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification
- Health hazard: 3
- Chronic Health Hazard: *
- Flammability: 3
- Physical hazards: 0

NFPA Rating
- Health hazard: 3
- Fire: 3
- Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 3-Bromo-1-propene

Formula: C₃H₅Br

Molecular Weight: 120.98 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Bromopropene</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>106-95-6</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-446-6</td>
</tr>
</tbody>
</table>

Methyloxirane Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No.</td>
<td>75-56-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-879-2</td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-055-00-4</td>
</tr>
</tbody>
</table>
| Registration number | 01-2119480483-35-XXXX | <= 0.1 %

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
5. FIREFIGHTING MEASURES

**Conditions of flammability**
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**
Wear self-contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas

**Further information**
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Flash back possible over considerable distance. Container explosion may occur under fire conditions. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C
Moisture sensitive. Light sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyloloxirane</td>
<td>75-56-9</td>
<td>TWA</td>
<td>2 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye &amp; Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans Sensitizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>240 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

The value in mg/m3 is approximate.
Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form clear, liquid
Colour colourless

Safety data
pH no data available
Melting point/freezing point Melting point/range: -119 °C (-182 °F) - lit.
Boiling point 70 - 71 °C (158 - 160 °F) - lit.
Flash point -1 °C (30 °F) - closed cup
Ignition temperature 290 °C (554 °F)
Auto-ignition temperature no data available
Lower explosion limit 4.3 % (V)
Upper explosion limit 7.3 % (V)
Vapour pressure no data available
Density 1.398 g/cm³ at 25 °C (77 °F)
Water solubility 3.83 g/l at 25 °C (77 °F)
Partition coefficient: n-octanol/water log Pow: 1.79 at 20 °C (68 °F)
Relative vapour density no data available
Odour unpleasant
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid

Materials to avoid
Oxidizing agents, Alkali metals, Alkaline earth metals, Light metals, Amides, Amines, Powdered metals

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas
Other decomposition products - no data available
Contains the following stabiliser(s):
Methyloxirane (<=0.1 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD₅₀
LD₅₀ Oral - rat - 120 mg/kg

Inhalation LC₅₀
LC₅₀ Inhalation - rat - 30 min - 10,000 mg/l

Dermal LD₅₀
no data available

Other information on acute toxicity
LD₅₀ Intraperitoneal - rat - 48 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
Genotoxicity in vitro - S. typhimurium - positive
Other mutation test systems
Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Methyloxirane)
NTP: Reasonably anticipated to be a human carcinogen (Methyloxirane)
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion Toxic if swallowed.
Skin May be harmful if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.

Signs and Symptoms of Exposure
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.

Synergistic effects
no data available

Additional Information
RTECS: UC7090000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish mortality LC50 - Carassius auratus (goldfish) - < 0.8 mg/l - 24.0 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

Biochemical Oxygen Demand (BOD) 0.82 mg/g
Chemical Oxygen Demand (COD) 0.82 mg/g
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1099  Class: 3 (6.1)  Packing group: I
Proper shipping name: Allyl bromide
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1099  Class: 3 (6.1)  Packing group: I
Proper shipping name: ALLYL BROMIDE
Marine pollutant: Marine pollutant

IATA
UN number: 1099  Class: 3 (6.1)  Packing group: I
Proper shipping name: Allyl bromide
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Carcinogen, Target Organ Effect, Toxic by ingestion, Corrosive

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

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<thead>
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<td>75-56-9</td>
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Methyloxirane

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

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Methyloxirane

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Methyloxirane
3-Bromopropene

Pennsylvania Right To Know Components

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Methyloxirane
3-Bromopropene

New Jersey Right To Know Components

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Methyloxirane
3-Bromopropene
California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.
Methyloxirane

CAS-No. 75-56-9
Revision Date 2007-09-28

16. OTHER INFORMATION

Further information
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