# Material Safety Data Sheet

Version 4.6
Revision Date 04/25/2012
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## 1. PRODUCT AND COMPANY IDENTIFICATION

| | | |
|---|---|---|
| Product name | : | Allyl bromide |
| Product Number | : | A29585 |
| Brand | : | Aldrich |
| Supplier | : | Sigma-Aldrich<br>3050 Spruce Street<br>SAINT LOUIS MO 63103<br>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<br>Product Safety - Americas Region<br>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 : $C_3H_5Br$

Molecular Weight : 120.98 g/mol

| Component | | Concentration |
|---|---|---|
| **3-Bromopropene** | | |
| CAS-No.<br>EC-No. | 106-95-6<br>203-446-6 | - |
| **Methyloxirane** | | |
| CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | 75-56-9<br>200-879-2<br>603-055-00-4<br>01-2119480483-35-XXXX | 0.1 - 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.

**Specific hazards arising from the chemical**
Flash back possible over considerable distance. Container explosion may occur under fire conditions.

**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 vapors, 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.
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**

| Components | CAS-No. | Value | Control parameters | Basis |
|---|---|---|---|---|
| Remarks | Potential Occupational Carcinogen See Appendix A | | | |
| Methyloxirane | 75-56-9 | TWA | 2 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | Eye & Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans Sensitizer | | | |
| | | TWA | 20 ppm<br>50 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | TWA | 100 ppm<br>240 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | 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.

**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) |
| Boiling point | 70 - 71 °C (158 - 160 °F) |
| Flash point | -1 °C (30 °F) - closed cup |
| Ignition temperature | 290 °C (554 °F) |
| Autoignition 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/mL 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**
May polymerize on exposure to light. Exposure to moisture. Exposure to air.
Heat, flames and sparks. Extremes of temperature and direct sunlight.

**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 sensitization**
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 EMS-No: F-E, S-D
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:

| | CAS-No. | Revision Date |
|---|---|---|
| Methyloxirane | 75-56-9 | 1994-04-01 |

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

| | CAS-No. | Revision Date |
|---|---|---|
| Methyloxirane | 75-56-9 | 1994-04-01 |

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

**Massachusetts Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Methyloxirane | 75-56-9 | 1994-04-01 |
| 3-Bromopropene | 106-95-6 | 2007-03-01 |

**Pennsylvania Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Methyloxirane | 75-56-9 | 1994-04-01 |
| 3-Bromopropene | 106-95-6 | 2007-03-01 |

**New Jersey Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Methyloxirane | 75-56-9 | 1994-04-01 |
| 3-Bromopropene | 106-95-6 | 2007-03-01 |

**California Prop. 65 Components**

| WARNING! This product contains a chemical known to the State of California to cause cancer. | CAS-No. | Revision Date |
|---|---|---|
| Methyloxirane | 75-56-9 | 2007-09-28 |

## 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.