1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Allyl alcohol
Product Number : 459798
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, Target Organ Effect, Toxic by ingestion, Highly toxic by skin absorption, Irritant

Target Organs
Lungs, Liver, Kidney

Other hazards which do not result in classification
Photosensitizer., Lachrymator.

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 1)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Specific target organ toxicity - single exposure (Category 3)
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 + H331 Toxic if swallowed or if inhaled
H310 Fatal in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
P302 + P350 IF ON SKIN: Gently wash with plenty of soap and water.
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. Causes respiratory tract irritation.
Skin May be fatal if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 2-Propen-1-ol
Formula: C₃H₆O
Molecular Weight: 58.08 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl alcohol</td>
<td></td>
</tr>
<tr>
<td>CAS-NO.</td>
<td>107-18-6</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-470-7</td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-015-00-6</td>
</tr>
</tbody>
</table>

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
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.

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

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.

Handle and store under inert gas.

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>Allyl alcohol</td>
<td>107-18-6</td>
<td>STEL</td>
<td>4 ppm</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

Remarks
Skin notation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>TWA</th>
<th>2 ppm</th>
<th>USA. Occupational Exposure Limits (OSHA) - Table Z-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m3</td>
<td>Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

Skin designation The value in mg/m3 is approximate.

|       |       | TWA   | 0.5 ppm            | USA. ACGIH Threshold Limit Values (TLV)                              |

Eye & Upper Respiratory Tract irritation Not classifiable as a human carcinogen Danger of cutaneous absorption

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>TWA</th>
<th>2 ppm</th>
<th>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

Skin notation

|       |       | TWA   | 2 ppm              | USA. NIOSH Recommended Exposure Limits                               |

|       |       |       |                    |                                                                      |
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: butyl-rubber
  - Minimum layer thickness: 0.3 mm
  - Break through time: 480 min
  - Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

- **Splash protection**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.4 mm
  - Break through time: 30 min
  - Material tested: Camatril® (KCL 730 / Aldrich Z677442, 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 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: liquid
- Colour: colourless

**Safety data**
- pH: no data available
- Melting point/range: -129 °C (-200 °F) - lit.
- Boiling point: 96 - 98 °C (205 - 208 °F) - lit.
- Flash point: 22 °C (72 °F) - closed cup
### 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**
Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Materials to avoid**
Alkali metals, Oxidizing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

- **Oral LD50**
  LD50 Oral - rat - 64 mg/kg

- **Inhalation LC50**
  LC50 Inhalation - rat - 8 h - 76 ppm
  Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema.

- **Dermal LD50**
  no data available

**Other information on acute toxicity**
no data available

**Skin corrosion/irritation**
Skin - rabbit - Open irritation test - 24 h

**Serious eye damage/eye irritation**
no data available

**Respiratory or skin sensitization**
Buehler Test - guinea pig - Causes sensitization.
Germ cell mutagenicity
Genotoxicity in vitro - Hamster - Lungs
Mutation in mammalian somatic cells.

Carcinogenicity
This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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)
Inhalation - May cause respiratory irritation.

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. Causes respiratory tract irritation.
Ingestion Toxic if swallowed.
Skin May be fatal if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects
no data available

Additional Information
RTECS: BA5075000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 0.3 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 1.65 mg/l - 48 h
Toxicity to algae
EC50 - SELENASTRUM - 2.25 mg/l - 72 h

Persistence and degradability
no data available

Bioaccumulative potential

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
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: 1098 Class: 6.1 (3) Packing group: I
Proper shipping name: Allyl alcohol
Reportable Quantity (RQ): 100 lbs
Marine Pollutant: No
Poison Inhalation Hazard: Hazard zone B

IMDG
UN number: 1098 Class: 6.1 (3) Packing group: I
Proper shipping name: ALLYL ALCOHOL
Marine Pollutant: No
EMS-No: F-E, S-D

IATA
UN number: 1098 Class: 6.1 (3) Proper shipping name: Allyl alcohol
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect, Toxic by ingestion, Highly toxic by skin absorption, Irritant

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

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl alcohol</td>
<td>107-18-6</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl alcohol</td>
<td>107-18-6</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components

Allyl alcohol
CAS-No. 107-18-6
Revision Date 1993-04-24

Pennsylvania Right To Know Components

Allyl alcohol
CAS-No. 107-18-6
Revision Date 1993-04-24

New Jersey Right To Know Components

Allyl alcohol
CAS-No. 107-18-6
Revision Date 1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2012 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. 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.

______________________________