1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Allyl alcohol
Product Number : 240532
Brand : Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Highly toxic by inhalation, 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 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: 4
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating
Health hazard: 4
Fire: 3
Reactivity Hazard: 0

Potential Health Effects
- Inhalation: May be fatal if inhaled. Causes respiratory tract irritation.
- Skin: Causes skin irritation. May be fatal if absorbed through skin.
- 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>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl alcohol</td>
<td>107-18-6</td>
<td>203-470-7</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. FIRE-FIGHTING MEASURES

- Suitable extinguishing media
  For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

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

- 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 non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
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. Store in cool place.
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>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl alcohol</td>
<td>107-18-6</td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>1999-03-01</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin contact does contribute to exposure. Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. 1999 Adoption.</td>
</tr>
</tbody>
</table>

| TWA              | 2 ppm   | 5 mg/m3 | 1989-03-01 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| SKIN contact does contribute to exposure. |

| STEL             | 4 ppm   | 10 mg/m3 | 1989-03-01 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| SKIN contact does contribute to exposure. |

| TWA              | 2 ppm   | 5 mg/m3 | 1993-06-30 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| SKIN contact does contribute to exposure. |

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.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
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 -129 °C (-200 °F) - lit.
Boiling point 96 - 98 °C (205 - 208 °F) - lit.
Flash point 22 °C (72 °F) - closed cup
Ignition temperature 378 °C (712 °F)
Lower explosion limit 2.5 % (V)
Upper explosion limit 18 % (V)
Vapour pressure 183 hPa (137 mmHg) at 55 °C (131 °F)
31.7 hPa (23.8 mmHg) at 25 °C (77 °F)
Density 0.854 g/cm³ at 25 °C (77 °F)
Water solubility no data available
Relative vapour density 2.01 - (Air = 1.0)

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.

Materials to avoid
Alkali metals, Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 64 mg/kg
LC50 Inhalation - rat - 8 h - 76 ppm
Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema.
LD50 Dermal - rabbit - 45 mg/kg

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

Serious eye damage/eye irritation
Eyes - rabbit - Severe eye irritation

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

Specific target organ toxicity - single exposure (GHS)
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

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

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

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 organisms.

**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. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. 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
- EMS-No: F-E, S-D
- Proper shipping name: ALLYL ALCOHOL
- Marine pollutant: No

**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, Highly toxic by inhalation, Toxic by ingestion, Highly toxic by skin absorption, Irritant

**DSL Status**
All components of this product are on the Canadian DSL list.

**SARA 302 Components**
- Allyl alcohol
  - CAS-No.: 107-18-6
  - Revision Date: 1991-07-01

**SARA 313 Components**
- Allyl alcohol
  - CAS-No.: 107-18-6
  - Revision Date: 1991-07-01

**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: 1991-07-01

**Pennsylvania Right To Know Components**
- Allyl alcohol
  - CAS-No.: 107-18-6
  - Revision Date: 1991-07-01

**New Jersey Right To Know Components**
- Allyl alcohol
  - CAS-No.: 107-18-6
  - Revision Date: 1991-07-01
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
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