Material Safety Data Sheet
Allyl Alcohol, 99%

Section 1 - Chemical Product and Company Identification

MSDS Name: Allyl Alcohol, 99%

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-18-6</td>
<td>Allyl Alcohol</td>
<td>99</td>
<td>203-470-7</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: clear, colorless liquid. Flash Point: 70 deg F.

**Danger!** May be fatal if absorbed through the skin. Causes severe eye irritation. Lachrymator (substance which increases the flow of tears). **Flammable liquid and vapor.** Harmful if swallowed. Harmful if inhaled. Causes skin irritation. Causes digestive and respiratory tract irritation. May cause central nervous system depression.

**Target Organs:** Kidneys, liver.

**Potential Health Effects**

**Eye:** Causes severe eye irritation. Lachrymator (substance which increases the flow of tears).

**Skin:** Causes skin irritation. May be fatal if absorbed through the skin.

**Ingestion:** Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

**Inhalation:** Harmful if inhaled. May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. May cause pulmonary edema and severe respiratory disturbances. Vapors may cause dizziness or suffocation.

**Chronic:** May cause liver and kidney damage. Effects may be delayed.

Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** None reported.

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**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**Flash Point:** 70e deg F (21.11 deg C)

**Autoignition Temperature:** 713 deg F (378.33 deg C)

**Explosion Limits, Lower:** 2.5%

**Upper:** 18.0%

**NFPA Rating:** (estimated) Health: 4; Flammability: 3; Instability: 1

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**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. A vapor suppressing foam may be used to reduce vapors.

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**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.
Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
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<tbody>
<tr>
<td>Allyl Alcohol</td>
<td>0.5 ppm TWA; skin potential for cutaneous absorption</td>
<td>2 ppm TWA; 5 mg/m3 TWA 20 ppm IDLH</td>
<td>2 ppm TWA; 5 mg/m3 TWA</td>
</tr>
</tbody>
</table>

Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.

Physical State: Liquid
Appearance: clear, colorless
Odor: Pungent odor.
P pH: Not available.
Vapor Pressure: 28 mm Hg @ 20 C
Vapor Density: 2.00
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 97 deg C
Freezing/Melting Point: -50 deg C
Decomposition Temperature: Not available.
Solubility: Miscible with water.
Specific Gravity/Density: 0.85
Molecular Formula: C3H6O
Molecular Weight: 58.0414

Chemical Stability: May form explosive peroxides. May polymerize. Forms explosive mixture with air (flash point 70 degrees F).
Conditions to Avoid: High temperatures, mechanical shock, incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials: Oxidizing agents, strong acids, acids, alkali metals, aluminum, amines, coatings, magnesium, plastics, rubber, sodium hydroxide, isocyanates, sodium, carbontetrachloride, chlorosulfonic acid, oleum, metallic halides, diallyl phosphide.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes.
and gases, carbon dioxide.

**Hazardous Polymerization:** Will occur.

### Section 11 - Toxicological Information

**RTECS#:**
- **CAS#** 107-18-6: BA5075000

**LD50/LC50:**
- **CAS#** 107-18-6:
  - Draize test, rabbit, eye: 20 mg Severe;
  - Inhalation, mouse: LC50 = 500 mg/m3/2H;
  - Inhalation, mouse: LC50 = 500 mg/m3/2H;
  - Inhalation, rat: LC50 = 76 ppm/8H;
  - Oral, mouse: LD50 = 96 mg/kg;
  - Oral, mouse: LD50 = 75 mg/kg;
  - Oral, rabbit: LD50 = 52 mg/kg;
  - Oral, rat: LD50 = 64 mg/kg;
  - Skin, rabbit: LD50 = 45 mg/kg;

**Carcinogenicity:**
- **CAS#** 107-18-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Neurotoxicity:** No information available.

**Mutagenicity:** Mutation in microorganisms (Salmonella typhimurium) = 100 umol/L Mutation in microorganisms (Salmonella typhimurium) = 50 ug/plate

**Other Studies:** Standard Draize test (eye, Human) = 25 ppm; Severe. Standard Draize test (eye, rabbit) = 20 mg; Severe.

### Section 12 - Ecological Information

**Ecotoxicity:** Fish: Goldfish: LC50 = 1 mg/L; 24 Hr.; Unspecified Bacteria: Phytobacterium phosphoreum: EC50 = 216-608 mg/L; 5,15,30 Minutes; Microtox test No data available.

**Environmental:** Residue disappearance and leaching of C-allyl alcohol from different soils was studied in laboratory experiments. Residue disappearance and leaching from soils was correlated negatively to the organic matter content. Migration to groundwater and biodegradation are expected to be the predominant fates of allyl alcohol released to soil. Volatilization and direct photolysis are not expected to be significant. The most likely fate of allyl alcohol is expected to be biodegradation.

**Physical:** No information found.

**Other:** No information available.

### Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate
classification.
**RCRA P-Series:** CAS # 107-18-6: waste number P005.
**RCRA U-Series:** None listed.

### Section 14 - Transport Information

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<tr>
<td><strong>Shipping Name:</strong></td>
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<tr>
<td><strong>Hazard Class:</strong></td>
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<tr>
<td><strong>UN Number:</strong></td>
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<tr>
<td><strong>Packing Group:</strong></td>
</tr>
<tr>
<td><strong>Additional Info:</strong></td>
</tr>
</tbody>
</table>

### Section 15 - Regulatory Information

**Hazard Symbols:**
T F N

**Risk Phrases:**
- R 10 Flammable.
- R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R 36/37/38 Irritating to eyes, respiratory system and skin.
- R 50 Very toxic to aquatic organisms.

**Safety Phrases:**
- S 16 Keep away from sources of ignition - No smoking.
- S 33 Take precautionary measures against static discharges.
- S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S 38 In case of insufficient ventilation, wear suitable respiratory equipment.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 9 Keep container in a well-ventilated place.
- S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

### Section 16 - Additional Information

**MSDS Creation Date:** 5/10/1999
**Revision #5 Date:** 3/18/2003

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