Fact Sheet

# Allyl Alcohol

ST. CLAIR COUNTY HEALTH DEPARTMENT
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## What is Allyl Alcohol

Allyl alcohol is a toxic, colorless liquid. It is an **extremely hazardous substance** that can cause severe irritation and must be handled with extreme caution. In small amounts, the odor is alcohol-like. In larger amounts, the odor is pungent and mustard-like. The liquid is lighter than water; the vapor is heavier than air. (It is also known as allyic alcohol, 3-hydroxypropene, 2-propenyl alcohol, 2-propen -1-ol, and vinyl carbinol.)

Allyl alcohol is flammable and easily ignited by heat, sparks, or flames, producing irritating, and toxic gases. Explosive vapor/ air mixtures may be formed at temperatures above 70°F.

Allyl alchol is used in the manufacture of drugs, organic chemicals, plastics, herbicides, and pesticides. Prior to working with allyl alcohol, employee training must be provided on proper handling and storage procedures due to its toxicity.

## Exposure

**For immediate assistance, call the Poison Control Center Hotline: 1-800-222-1222.**

Exposure is typically limited to the industries where allyl alcohol is produced or used. Heating, pouring, spraying, spills, and evaporation create conditions that increase the risk of employee exposure. Though unlikely, the general population may be exposed by inhalation of chemicals in the air or by ingestion of contaminated water surrounding a facility using or storing allyl alcohol, by skin or eye contact with vapor or liquid, or by ingestion of food that has been contaminated with allyl alcohol. Exposure can occur by:

**Breathing** – Inhalation of allyl alcohol vapors can cause adverse health effects. Leaving liquid allyl alcohol exposed to air above 70°F will create favorable conditions for vapor to form. Since vapor is heavier than air, it tends to be found in low-lying areas.

**Eating/ Drinking** – Accidental ingestion of the substance can lead to adverse health effects. While food contamination would be possible if a solution of allyl alcohol was used, this is not a likely route of exposure due to its irritating properties.

**Skin/Eye Contact** – Vapors and liquids can come into contact with the skin and/or eyes, causing adverse health effects. Contact lenses should not be worn when working with this substance.

## Health Effects

Do not rely on sight or smell to indicate an exposure to a chemical release. Some individuals do not have the ability to smell an odor or see a chemical cloud.

The degree of reaction to exposure to any chemical depends on three main factors:

- The amount one is exposed to
- The route of exposure (breathing, touching, ingestion)
- The length of time and frequency of the exposure(s)

**Short-term effects**

The following *acute* effects may be noted immediately or shortly after exposure:

- Eye contact can cause pain in or behind the eye, blurred vision, severe irritation, and burns of the eyes that may lead to permanent damage.
- In its liquid state, allyl alcohol is easily absorbed into the skin where it can cause severe skin irritation and burns. It can also cause deep pain due to its effect on the muscles, possibly resulting in local muscle spasms or aching. This effect may be delayed after exposure.
- Breathing allyl alcohol can cause irritation of the nose, throat and lungs causing coughing and/or shortness of breath. Exposure can cause a build-up of fluid in the lungs (pulmonary edema), causing a severe shortness of breath and death if not treated.
- Ingesting allyl alcohol can cause abdominal pain, nausea, vomiting, diarrhea and/or liver damage.
- In addition to the effects listed above, higher exposure can cause headache, dizziness, weakness and loss of consciousness, coma, cardiovascular failure and death.

**Long-term (chronic) effects**

The following *chronic* health effects can occur after high or repeated exposure and can last for months or years:

Individuals with existing liver, kidney, lung, skin or eye disease may be at increased risk of illness after exposure to allyl alcohol.

- Allyl alcohol exposure can cause liver or kidney damage, depending on the route of exposure.
- Inhalation exposure can cause repiratory tract irritation including coughing, shortness of breath and lung irritation and/or damage.
- Allyl alchol exposure may cause mutations (genetic changes) or damage genetic material, but this has yet to be definitely established in humans.
- Exposure may worsen symptoms of existing respiratory diseases/ conditions such as asthma, bronchitis or emphysema.

## Treatment

***If you have been exposed, seek help immediately!***

**Eye contact** – Flush the eye(s) with large amounts of water and continue for at least 15 minutes, occasionally lifting the upper and lower lids.

**Skin contact** – If skin contact has been made with the liquid, wash the skin with soap and large amounts of water and rinse thoroughly. If contact has been made with clothing, remove the contaminated clothing. If necessary, cut the clothing off, do not pull it over the head. Place contaminated clothing in closed containers until it can be decontaminated or discarded by professionals.

**Breathing** – Leave the area of the exposure and move to a source of fresh air.

## Diagnosis

If exposed, seek medical attention. If symptoms develop or overexposure is suspected the following may be useful:

- Liver and kidney function tests
- Chest x-ray
- Respiratory function

## Prevention

Under normal working conditions, use proper handling and storage methods. Be sure to follow posted hazard and warning information. Enclose operations and/or use local exhaust ventilation. Personal protective

equipment and respiratory protection may be required. Wash hands before eating, drinking or smoking. Wash thoroughly at the end the work shift and immediately after exposure.

*In the event of accidental or intentional release, leave the area immediately*. If indoors, leave the building. If outdoors, move away from the cloud or smell.

***For more sources of information on this topic visit or contact:***

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co
MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES www.michigan.gov/mdhhs
CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov 1-888-246-2675
MICHIGAN DEPARTMENT OF COMMUNITY HEALTH TOXICS AND HEALTH HOTLINE: 1-800-648-6942
MICHIGAN OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (MIOSHA): 517-322-1814
THE AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY: 1-888-422-8737