



1,2-DICHLOROPROPANE

What is 1,2-dichloropropane?

1,2-dichloropropane, also called propylene dichloride, is a man-made chemical with a strong odor. A colorless liquid, 1,2-dichloropropane rapidly turns into a vapor at room temperature. It is part of a group of chemicals called volatile organic compounds (VOCs). VOCs harm air quality because they add to ozone levels. Ozone is a common cause of air pollution at ground levels.

Where can 1,2-dichloropropane be found and how is it used?

Air levels of 1,2-dichloropropane are usually low and it is found in a few drinking water supplies. Most of those are from groundwater sources. Private wells in some farming areas have the greatest risk of being polluted.

Before the early 1980s, 1,2-dichloropropane was used in farming to kill insects. It was also found in paint strippers, varnishes, and furniture finish removers. Today, 1,2-dichloropropane is used in the United States only in research and industry.

How can people be exposed to 1,2-dichloropropane?

Most people are not likely to be exposed to 1,2-dichloropropane because the use of 1,2-dichloropropane in the United States is limited.

You could be exposed to 1,2-dichloropropane through:

- **Breathing** 1,2-dichloropropane vapors. This could happen if you work where it is made or used. You could also breathe it if you live near a waste site containing 1,2-dichloropropane.
- **Drinking** well water polluted with 1,2-dichloropropane. This could happen if you live near a waste site containing 1,2-dichloropropane or in an area of heavy pesticide use.
- **Touching** it by spilling or splashing it on your skin. People who work where 1,2-dichloropropane is made or used may be exposed in this way. You could also touch it if you handle polluted soil near a waste site containing 1,2-dichloropropane.
- **Eye Contact** by splashing it in your eyes at work. You could also get it into your eyes if you touch polluted soil with your hands and then rub your eyes.

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Frequently Asked Questions

How does 1,2-dichloropropane work?

Animal studies were done on the effects of eating or drinking 1,2-dichloropropane. They showed that when it enters the body this way, it quickly leaves the body. This happens through urine and waste matter. It also leaves the body from the lungs when breathing out. 1,2-dichloropropane may enter the lungs of workers using it indoors as a solvent.

How can 1,2-dichloropropane affect my health?

People who breathe high levels of 1,2-dichloropropane can have trouble breathing and may die. Other effects include coughing, throwing up, bleeding through the nose, and feeling very tired. Damage can also be done to the blood cells, liver, and kidneys. Drinking 1,2-dichloropropane could also result in coma or death. People who drank cleaning solutions containing 1,2-dichloropropane had headaches, felt dizzy, and had upset stomachs, liver and kidney damage, and anemia, a blood problem.

Animals who breathed low amounts of 1,2-dichloropropane over short- and long-term periods had damaged livers, kidneys, and breathing systems. High amounts resulted in death. Short-term exposure to high levels of vapors irritated the eyes and throat.

Animals ingesting 1,2-dichloropropane at low doses over shorter periods had liver and kidney damage. Animals ingesting high doses died. Some studies suggest that eating or drinking 1,2-dichloropropane may cause reproductive effects, but the chemical has not been shown to cause birth defects in humans or animals.

No reports have been made of any health effects in humans, including cancer, after exposure to low-levels of 1,2-dichloropropane for short or long time periods. However, oral long-term exposure in animals produced evidence of liver and breast cancer.

How is 1,2-dichloropropane poisoning treated?

There is no treatment for 1,2-dichloropropane poisoning. A doctor will treat the symptoms. Persons breathing high levels should be observed for 48 hours for signs of pulmonary edema (fluid build-up in the lungs).

What should I do if exposed to 1,2-dichloropropane?

- **If you touch 1,2-dichloropropane**, remove contaminated clothing. Wash skin with soap and water.
- **If you get 1,2-dichloropropane in your eyes**, flush with clean water for 15 minutes. Get medical help fast.
- **If you swallow 1,2-dichloropropane**, get medical help right away.

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What factors limit use or exposure to 1,2-dichloropropane?

At work, safe work methods can limit exposure. Have a source of fresh air and a ventilation system. Provide workers with breathing protection. Wear protective clothing and safety glasses. If you live near a waste site that may contain 1,2-dichloropropane, avoid contact with soil and drink bottled water.

Is there a medical test to show whether I've been exposed to 1,2-dichloropropane?

Tests can show 1,2-dichloropropane in the urine and the blood. Levels in the urine can predict how much 1,2-dichloropropane is in the air. Blood levels cannot do this. These tests cannot tell if you will have harmful health effects. Since 1,2-dichloropropane leaves the body fast, it is best to test for it soon after exposure.

Technical information for 1,2-dichloropropane

CAS Number: 78-87-5

Chemical Formula: C₃H₆Cl₂

Carcinogenicity (EPA): has not undergone a complete evaluation and determination under U.S. EPA's IRIS program for evidence of human carcinogenic potential.

MCL (Drinking Water): 0.005 milligrams per liter (0.005 ppm).

OSHA Standards: The permissible exposure limit for an 8-hour day, 40-hour week is 75 parts per million of air (350 milligrams per cubic meter of air).

NIOSH Standards: There is no NIOSH standard in effect.

Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 2021. Toxicological profile for 1,2-Dichloropropane. Atlanta, GA: U.S. Department of Health and Human Services. <https://www.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=831&tid=162>

NIOSH Pocket Guide to Chemical Hazards,
<http://www.cdc.gov/niosh/npg/nengapdx.html#a>

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