

This fact sheet answers the most frequently asked health questions (FAQs) about 1,2-dichloropropane. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

**HIGHLIGHTS:** 1,2-Dichloropropane is primarily used to make other chlorinated chemicals. Exposure to high levels of 1,2-dichloropropane can damage the liver, kidneys, blood, and lungs, and affect the brain. It has been found at 26 of the 1,177 National Priorities List sites identified by the Environmental Protection Agency (EPA).

### What is 1,2-dichloropropane?

(Pronounced 1,2-dī-klôr'ō-prō/pān)

1,2-Dichloropropane is a colorless, flammable liquid with a chloroform-like odor. It is moderately soluble in water and readily evaporates into air. It does not occur naturally in the environment.

1,2-Dichloropropane production in the United States has declined over the past 20 years. It was used in the past as a soil fumigant, chemical intermediate, and industrial solvent and was found in paint strippers, varnishes, and furniture finish removers. Most of these uses were discontinued. Today, almost all of the 1,2-dichloropropane is used as a chemical intermediate to make perchloroethylene and several other related chlorinated chemicals.

### What happens to 1,2-dichloropropane when it enters the environment?

- 1,2-Dichloropropane released to air can spread to areas far from where it was released because it is not rapidly broken down by reactions with other chemicals and sunlight.
- Most of the 1,2-dichloropropane in water will evaporate to the air.

- When released to soil, it is not easily broken down by bacteria, but will easily evaporate to the air and filter into the groundwater.
- 1,2-Dichloropropane does not build up in the food chain.

### How might I be exposed to 1,2-dichloropropane?

- Most people are not likely to be exposed to 1,2-dichloropropane because of its limited use.
- If you work where 1,2-dichloropropane is made or used, you could be exposed by breathing air that contains its vapors or by spilling or splashing it on your skin.
- People who live near a waste site containing 1,2-dichloropropane could be exposed by drinking contaminated groundwater, breathing vapors released to the air, or getting contaminated soil on their skin.

### How can 1,2-dichloropropane affect my health?

People who intentionally or accidentally breathe high levels of 1,2-dichloropropane have experienced difficulty breathing, coughing, vomiting, nosebleed, fatigue, and damage to blood cells, liver, and kidneys. People who accidentally drank cleaning solutions containing 1,2-dichloropropane experienced headaches, dizziness, nausea, liver and kidney damage, anemia, coma, and death.

ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>

Animal studies indicate that breathing low levels of 1,2-dichloropropane over short- or long-term periods causes damage to the liver, kidney, and respiratory system. Breathing high levels causes death. Similar effects have been reported when animals were given 1,2-dichloropropane by mouth. Some studies indicate that ingesting 1,2-dichloropropane may cause reproductive effects. One study reported a delay in bone formation of the skull in fetal rats following exposure of the mother rats to 1,2-dichloropropane.

### **How likely is 1,2-dichloropropane to cause cancer?**

It is not known whether 1,2-dichloropropane causes cancer in people. The carcinogenicity of 1,2-dichloropropane has been evaluated in animal studies with rats and mice. Liver tumors have been observed in mice, and mammary gland tumors have been found in rats. The International Agency for Research on Cancer (IARC) has determined that 1,2-dichloropropane is unclassifiable as to human carcinogenicity.

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

Urine and blood tests can be used to find out if you have been exposed to 1,2-dichloropropane. Levels measured in the urine can be used to predict the levels in the air. These tests cannot predict whether you will suffer harmful effects. Because special equipment is needed, these tests are not usually done in the doctor's office.

### **Has the federal government made recommendations to protect human health?**

The EPA has set a Maximum Contaminant Level (MCL) of 0.005 parts per million (0.005 ppm) for 1,2-dichloropropane in drinking water. The EPA recommends that the level of 1,2-

dichloropropane in lakes and streams should be limited to 0.52 parts per billion (0.52 ppb) to prevent possible human health effects from drinking contaminated water or eating contaminated fish. Any release to the environment greater than 1,000 pounds of 1,2-dichloropropane must be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a workplace air concentration limit of 75 ppm over an 8-hour workday, 40-hour workweek.

The federal recommendations have been updated as of July 1999.

### **Glossary**

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To change into a vapor or a gas.

Long-term: Lasting one year or longer.

National Priorities List: A list of the nation's worst hazardous waste sites.

ppb: Parts per billion.

ppm: Parts per million.

Short-term: Lasting 14 days or less.

Tumor: An abnormal mass of tissue.

### **References**

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. Toxicological profile for 1,2-dichloropropane. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html> ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

