

This fact sheet answers the most frequently asked health questions (FAQs) about 1,1-dichloroethane. 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. This information is important 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: 1,1-Dichloroethane is used to make other chemicals and to dissolve and remove grease. Breathing very high levels can affect your heart and animal studies have seen kidney disease from long-term exposure to high levels in air. 1,1-Dichloroethane has been found in at least 248 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is 1,1-dichloroethane?

(Pronounced 1,1-dī' klōr' ō ēth' ān')

1,1-Dichloroethane is a colorless, oily liquid with a sweet odor. It evaporates easily at room temperature and burns easily. It does not occur naturally in the environment.

In the past, 1,1-dichloroethane was used as a surgical anesthetic, but it is no longer used this way. Today it is used primarily to make other chemicals, to dissolve substances such as paint, varnish, and finish removers, and to remove grease.

What happens to 1,1-dichloroethane when it enters the environment?

- 1,1-Dichloroethane is released from industrial processes primarily to the air.
- 1,1-Dichloroethane evaporates from water rapidly into the air.
- It can also be found in the air as a breakdown product of another chemical, 1,1,1-trichloroethane.

- 1,1-Dichloroethane does not dissolve easily in water.
- Small amounts of 1,1-dichloroethane released to soil can evaporate into the air or move into groundwater.
- It is not known how long it stays in soil.
- 1,1-Dichloroethane is not expected to build up in the body tissues of animals.

How might I be exposed to 1,1-dichloroethane?

- Breathing air containing it from industrial releases or hazardous waste sites.
- Drinking contaminated tap water.
- Touching soil containing it.
- Touching contaminated materials in the workplace.

How can 1,1-dichloroethane affect my health?

Very limited information is available on the effects of 1,1-dichloroethane on people's health. The chemical was discontinued as a surgical anesthetic when effects on the heart, such as irregular heart beats, were reported.

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

Studies in animals have shown that 1,1-dichloroethane can cause kidney disease after long-term exposure to high levels in air. Delayed growth was seen in the offspring of animals who breathed high concentrations of the chemical during pregnancy.

How likely is 1,1-dichloroethane to cause cancer?

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified 1,1-dichloroethane for carcinogenicity.

1,1-Dichloroethane caused cancer in one study in which rats and mice were fed large doses of the chemical for their lifetimes.

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

Tests are available that measure 1,1-dichloroethane in urine, blood, breath, and body tissues. These tests aren't available at most doctors' offices, but can be done at a special laboratory that has special equipment.

The tests must be done soon after exposure occurs, because most of the 1,1-dichloroethane that is taken into the body leaves within 2 days. In addition, these tests cannot tell you when you were exposed, or whether health effects will occur.

Has the federal government made recommendations to protect human health?

The EPA requires that spills or accidental releases into the environment of 1,000 pounds or more of 1,1-dichloroethane be

reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set an occupational exposure limit of 400 milligrams of 1,1-dichloroethane per cubic meter of air (400 mg/m³) for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) recommend the same exposure limit in air.

NIOSH currently recommends that a level of 12,150 mg/m³ be considered immediately dangerous to life and health. This is the exposure level of 1,1-dichloroethane that is likely to cause permanent health problems or death.

The federal recommendations have been updated as of July 1999.

Glossary

Anesthetic: A substance used to cause numbness.

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To change into a vapor or gas.

Milligram (mg): One thousandth of a gram.

References

Agency for Toxic Substances and Disease Registry. 1990. Toxicological profile for 1,1-dichloroethane. 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.

