

# 1,1-Dichloroethane - ToxFAQs™

CAS # 75-34-3

This fact sheet answers the most frequently asked health questions (FAQs) about 1,1-dichloroethane. For more information, call the CDC Information Center at 1-800-232-4636. 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:** Exposure to 1,1-dichloroethane occurs mainly from eating contaminated food, but may also occur from skin contact, breathing contaminated air, or drinking contaminated water. 1,1-Dichloroethane affects the function of the nervous system. 1,1-Dichloroethane has been found in at least 673 of the 1,699 National Priorities List sites identified by the Environmental Protection Agency (EPA)..

## What is 1,1-dichloroethane?

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.

1,1-Dichloroethane is used mostly as an intermediate in the manufacture of 1,1,1-trichloroethane (1,1,1-TCE). It is also used in limited amount as a solvent for cleaning and degreasing, and in the manufacture of plastic wrap, adhesives, and synthetic fiber.

## What happens to 1,1-dichloroethane when they enter the environment?

- 1,1-Dichloroethane breaks down slowly in air and has the potential for long-range transport.
- 1,1-Dichloroethane does not dissolve easily in water.
- 1,1-Dichloroethane does not degrade rapidly in water. It can evaporate from the water into the air.
- 1,1-Dichloroethane does not bind strongly to soil particles, unless the organic content of the soil is high.
- Small amounts of 1,1-dichloroethane released to soil can evaporate into the air or move into ground water.
- 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 1,1-dichloroethane from industrial releases or hazardous waste sites.
- Drinking contaminated water if you live near industrial facilities or hazardous waste sites.
- Touching contaminated soil, but little will enter the body due to 1,1-dichloroethane's high volatility.

## How can 1,1-dichloroethane affect my health?

High levels of 1,1-dichloroethane that cause anesthesia can cause irregular heartbeats, which is why its use as a surgical anesthetic was discontinued.

Kidney effects have been observed in cats exposed to 1,1 dichloroethane in air for long periods. However, kidney effects have not been observed in other animal species following long-term inhalation or oral exposure.

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

A study in rats and mice found suggestive evidence that 1,1-dichloroethane may cause cancer. However, the study had several flaws and the results are not conclusive. Another long-term study in mice drinking water containing 1,1-dichloroethane did not find cancer.

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The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC) have not evaluated the carcinogenic potential of 1,1-dichloroethane. The EPA has determined that 1,1-dichloroethane is a possible human carcinogen.

## How can 1,1-dichloroethane affect children?

There are no data that describe the effects of exposure to 1,1-dichloroethane on children or young animals. Although it is likely that children would show the same health effects as adults, we don't know whether children are more susceptible than are adults to 1,1-dichloroethane effects.

We do not know whether 1,1-dichloroethane can produce birth defects in humans. Minor skeletal problems were observed in the fetuses of rats breathing 1,1-dichloro-ethane; decreases in body weight were also observed in the mothers.

## How can families reduce the risk of exposure to 1,1-dichloroethane?

- Prevent children from playing in soil contaminated with 1,1-dichloroethane, as it may occur near a hazardous waste site that contains this substance.
- If you use drinking well water and live near a hazardous site, it may be a good idea to have the water tested for 1,1-dichloroethane and other contaminants.
- If you use bottled water, you should contact the bottler with specific questions on potential contaminants. Bottled water may be less subject to 1,1-dichloroethane contamination than tap water.

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

1,1-Dichloroethane and its breakdown products (metabolites) can be measured in blood and urine. But the detection of 1,1-dichloroethane or its metabolites cannot predict the kind of health effects that might develop from that exposure. Because 1,1-dichloroethane and its metabolites leave the body fairly rapidly, the tests need to be conducted within days after exposure. These tests are not available at most doctors' offices, but can be done at a special laboratory.

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

The EPA has included 1,1-dichloroethane as a priority contaminant in the drinking water program.

The Occupational Safety and Health Administration (OSHA) set a legal limit of 100 ppm 1,1-dichloroethane in workplace air averaged over an 8-hour workday.

The National Institute for Occupational Safety and Health (NIOSH) recommends a limit of 100 ppm 1,1-dichloro-ethane in workplace air averaged over a 10-hour work day.

## References

This ToxFQA<sup>TM</sup> information is taken from the 2015 Toxicological Profile for 1,1 Dichloroethane produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

## Where can I get more information?

For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Human Health Sciences, 1600 Clifton Road NE, Mailstop F-57, Atlanta, GA 30329-4027.

Phone: 1-800-232-4636.

ToxFQA<sup>TM</sup> on the web: [www.atsdr.cdc.gov/toxFQAs](http://www.atsdr.cdc.gov/toxFQAs)

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.