

This fact sheet answers the most frequently asked health questions (FAQs) about 1,1,2-trichloroethane. 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: 1,1,2-Trichloroethane is primarily used as a solvent and a chemical intermediate in industry. Breathing high levels of it caused effects on the liver, kidney, and nervous system in animals. This chemical has been found in at least 45 of the 1,177 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is 1,1,2-trichloroethane?

(Pronounced 1,1,2-trī-klôr'ō-ěth'ān')

1,1,2-Trichloroethane is a colorless, sweet-smelling liquid. It does not burn easily, can be dissolved in water, and evaporates easily. It is used as a solvent (a chemical that dissolves other substances) and as an intermediate in the production of the chemical, 1,1-dichloroethane. 1,1,2-Trichloroethane is sometimes present as an impurity in other chemicals, and it may be formed when another chemical breaks down in the environment under conditions where there is no air.

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

- ☐ Most 1,1,2-trichloroethane released into the environment will go into the air.
- ☐ 1,1,2-Trichloroethane breaks down slowly in air; it takes approximately 49 days for half of it to break down.
- ☐ 1,1,2-Trichloroethane may enter the groundwater by filtering through the soil.
- ☐ It appears to stay in water for a long time; it takes years for it to break down.

How might I be exposed to 1,1,2-trichloroethane?

- ☐ Breathing outdoor air that contains it from industrial releases.
- ☐ Drinking contaminated water.
- ☐ Breathing contaminated workplace air.
- ☐ Touching it when used as a solvent in the workplace.
- ☐ Breathing air near a hazardous waste site that contains 1,1,2-trichloroethane.

How can 1,1,2-trichloroethane affect my health?

No information is available on how breathing or swallowing 1,1,2-trichloroethane may affect your health. Applying 1,1,2-trichloroethane to the skin of a person resulted in stinging and burning of the skin.

When animals breathed high levels of 1,1,2-trichloroethane, it affected the liver and kidneys. Nervous system effects, such as excitation and sleepiness, were also seen. When animals swallowed food or water containing 1,1,2-trichloroethane, effects on the stomach, blood, liver, kidneys, and nervous system were seen.

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

We do not know whether 1,1,2-trichloroethane can affect reproduction in people. Animal studies have not shown the chemical to affect normal reproduction and development.

How likely is 1,1,2-trichloroethane to cause cancer?

No information is available on whether or not 1,1,2-trichloroethane will cause cancer in people. Only one study is available on the ability of 1,1,2-trichloroethane to cause cancer in animals. This study found an increase in liver cancer in mice, but not in rats, who were fed the chemical for their lifetime.

The International Agency for Research on Cancer (IARC) has determined that 1,1,2-trichloroethane is not classifiable as to its carcinogenicity to humans.

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

Samples of your breath, blood, and urine can be tested to determine if you have been recently exposed to 1,1,2-trichloroethane. These tests must be done soon after the exposure occurred. These tests will not tell you whether your health will be affected by 1,1,2-trichloroethane and are not routinely available in hospitals and clinics because they require special equipment.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.005 milligrams of 1,1,2-trichloroethane per liter of drinking water (0.005 mg/L).

Discharges, spills, or accidental releases of 100 pounds or more of 1,1,2-trichloroethane must be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 45 milligrams 1,1,2-trichloroethane per cubic meter of air (45 mg/m³) for an 8-hour workday in a 40-hour workweek.

The American Conference of Governmental and Industrial Hygienists (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH) also recommend an occupational exposure limit of 45 mg/m³ for 1,1,2-trichloroethane.

The federal recommendations have been updated as of July 1999.

Glossary

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Milligram (mg): One thousandth of a gram.

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

Solvent: A substance that dissolves another substance.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. Toxicological profile for 1,1,2-trichloroethane. 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.

