

This fact sheet answers the most frequently asked health questions (FAQs) about 1,1,2,2-tetrachloroethane. For more information, call the ATSDR 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 is 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:** 1,1,2,2-Tetrachloroethane is a manufactured chemical that is no longer used much in the United States. Breathing high levels in a closed room can cause fatigue, vomiting, dizziness, and possibly unconsciousness. Breathing, drinking, or touching large amounts of 1,1,2,2-tetrachloroethane for a long period of time can cause liver damage, stomachaches, or dizziness. 1,1,2,2-Tetrachloroethane has been found in at least 329 of the 1,699 National Priority List (NPL) sites identified by the Environmental Protection Agency (EPA).

### What is 1,1,2,2-tetrachloroethane?

1,1,2,2-Tetrachloroethane is a manufactured, colorless, dense liquid that does not burn easily. It is volatile and has a sweet odor.

In the past, it was used in large amounts to produce other chemicals, as an industrial solvent to clean and degrease metals, and as an ingredient in paints and pesticides. Commercial production of 1,1,2,2-tetrachloroethane for these uses has stopped in the United States. It presently is used only as a chemical intermediate in the production of other chemicals.

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

- Most 1,1,2,2-tetrachloroethane released to the environment eventually moves to the air or ground water.
- It does not attach to soil particles when released to land.
- When released to surface water, much of it will evaporate to the air while the rest may break down in the water.
- Breakdown of the chemical in the environment is slow; it takes about 1 year for half of the chemical to disappear from groundwater and 2 months in air.
- 1,1,2,2-Tetrachloroethane does not build up significantly in the bodies of fish or other organisms.

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

- The general public is not expected to be exposed to significant amounts of 1,1,2,2-tetrachloroethane. It is not commonly found in drinking water, soil, or food.
- Higher concentrations have been found occasionally in private well water that may have been used for drinking.
- You may be exposed to 1,1,2,2-tetrachloroethane if you live near a hazardous waste site that contains it or near an industrial building where the chemical is used.
- Since production of the chemical has stopped, most workers would not be exposed to it.
- If spills or accidents occur at work, exposure will likely be by breathing in vapors or through skin contact.

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

Most of the 1,1,2,2-tetrachloroethane that you may ingest or inhale will enter the bloodstream.

Breathing very high concentrations of 1,1,2,2-tetrachloroethane can rapidly cause drowsiness, dizziness, nausea, and vomiting. Most people recover from these effects once they are in fresh air. Breathing high levels of 1,1,2,2-tetrachloroethane for a long time can cause liver damage.

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

Drinking very large amounts of 1,1,2,2-tetrachloroethane can cause shallow breathing, faint pulse, decreased blood pressure, and possibly unconsciousness.

Liver damage has been observed in animals orally exposed to lower doses for a long time.

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

It is not known whether 1,1,2,2-tetrachloroethane causes cancer in humans. In a long-term study, 1,1,2,2-tetrachloroethane caused an increase in liver tumors in mice, but not in rats.

The International Agency for Research on Cancer (IARC) has determined that 1,1,2,2-tetrachloroethane cannot be classified as to its ability to cause cancer in humans, while the EPA has determined that it is a possible human carcinogen.

### **How can 1,1,2,2-tetrachloroethane affect children?**

Exposure of children to large amounts of 1,1,2,2-tetrachloroethane will probably cause the same effects observed in adults (i.e., fatigue, vomiting, dizziness, liver damage, stomachache). It is not known whether children are more or less susceptible to the effects of 1,1,2,2-tetrachloroethane than adults.

Some effects have been observed in animals born to females exposed to 1,1,2,2-tetrachloroethane during pregnancy. This occurred at exposure levels that were also toxic to the mothers.

### **How can families reduce the risks of exposure to 1,1,2,2-tetrachloroethane?**

Exposure to high amounts of 1,1,2,2-tetrachloroethane is unlikely because the chemical is no longer used in household products.

If you have old household products (i.e., cleaners, degreasers, and paints) at home that contain 1,1,2,2-tetrachloroethane, make sure they are stored out of the reach of children.

### **Is there a medical test to determine whether I have been exposed to 1,1,2,2-tetrachloroethane?**

There are no medical tests to determine whether you have been exposed to 1,1,2,2-tetrachloroethane. Urine and blood tests are available, but are common to several other types of chemicals and would not specifically indicate exposure to 1,1,2,2-tetrachloroethane.

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

The EPA has determined that exposure to 1,1,2,2-tetrachloroethane in drinking water at a concentration of 0.04 mg/L for up to 10 days is not expected to cause any adverse effects in a child.

The EPA has determined that lifetime exposure to 0.0003 mg/L 1,1,2,2-tetrachloroethane in drinking water is not expected to cause any adverse effects.

The Occupational Safety and Health Administration (OSHA) has set a limit of 5 parts per million (ppm) of 1,1,2,2-tetrachloroethane in air to protect workers during an 8-hour workday, 40-hour workweek.

### **References**

Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Toxicological Profile for 1,1,2,2-Tetrachloroethane. 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 and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-800-232-4636, 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.

