ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

1,2,3-TRICHLOROPROPANE
CAS # 96-18-4

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1995**

This fact sheet answers the most frequently asked health questions (FAQs) about 1,2,3-trichloropropane. 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.

SUMMARY: Exposure to 1,2,3-trichloropropane may occur from drinking water or from breathing air that is contaminated. This is most likely to occur near facilities that produce the chemical or near hazardous waste sites. People who are exposed to 1,2,3-trichloropropane can have eye and throat irritation. This chemical has been found in at least 20 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is 1,2,3-trichloropropane?

(Pronounced 1,2,3-trī′ klôr ō prō′pān′)

1,2,3-Trichloropropane is a synthetic chemical that is also known as allyl trichloride, glycerol trichlorohydrin, and trichlorohydrin.

It is a colorless, heavy liquid with a sweet but strong odor. It evaporates very quickly and small amounts dissolve in water.

It is mainly used to make other chemicals. Some of it is also used as an industrial solvent, paint and varnish remover, and cleaning and degreasing agent.

Very little information is available on the amounts manufactured and the specific uses.

What happens to 1,2,3-trichloropropane when it enters the environment?

- It breaks down in the atmosphere when exposed to sunlight.
- Every 15 days, half of the amount of 1,2,3-trichloropropane present in the air breaks down.
- It evaporates from surface water and surface soil.
- It leaches from deeper soil into the groundwater where it slowly breaks down.
- There is very little evaporation from groundwater, so 1,2,3-trichloropropane can stay in groundwater for a long time.
- Very little sticks to soil particles.
- It is not expected to build up in fish or plants.

How might I be exposed to 1,2,3-trichloropropane?

- Breathing low levels in the air.
- Drinking low levels in water.
- Drinking contaminated well water from wells near hazardous waste sites.
- Touching liquids or soil that contain 1,2,3-trichloropropane.
- Working in a facility where 1,2,3-trichloropropane is used.

How can 1,2,3-trichloropropane affect my health?

Exposure to high levels of 1,2,3-trichloropropane for a short time causes eye and throat irritation. People exposed to 100 parts of 1,2,3-trichloropropane per million parts of air (ppm) felt irritation, and some people exposed to 50 ppm for an 8-hour workday also had throat and eye irritation. We

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

don't know what would happen to someone who breathed low levels for a long time. We also don't know what happens to people who swallow it or get it on their skin.

Rats and mice died after breathing air containing 1,2,3-trichloropropane at levels higher than we have in the environment. When rats breathed it at levels lower than those that irritated humans, they developed eye, nose, and lung irritation, and liver and kidney disease. The main health effect in both animals and people is damage to the respiratory system.

When rats swallowed 1,2,3-trichloropropane at high levels, they died from liver and kidney damage. When exposed to moderate levels that did not cause death, the rats had minor liver and kidney damage, blood disorders, and stomach irritation.

When it was applied to the skin of rabbits, it caused severe irritation followed by injury to internal organs. This happened only when large amounts were applied to the skin.

We do not know if 1,2,3-trichloropropane damages people's ability to reproduce or if it causes birth defects. When rats breathed low levels for several weeks or swallowed a large amount for a few days there were no effects on their ability to reproduce and there was no increase in birth defects.

How likely is 1,2,3-trichloropropane to cause cancer?

The Department of Health and Human Services, the International Agency for Research on Cancer, and the Environmental Protection Agency (EPA) have not classified 1,2,3-trichloropropane for carcinogenicity.

We do not know whether 1,2,3-trichloropropane causes cancer in humans, but animals that swallowed low doses for most of their lives developed tumors in several organs.

Is there a medical test to show whether I've been exposed to 1,2,3-trichloropropane?

1,2,3-Trichloropropane can be measured in your blood, urine, and breath. However, it breaks down quickly and leaves your body in your breath, urine, and feces. The test cannot measure how much you have been exposed to or whether your health will be affected. The test requires special methods and equipment and is not usually available at your doctor's office.

Has the federal government made recommendations to protect human health?

The Environmental Protection Agency (EPA) recommends that no more than 2 parts of 1,2,3-trichloropropane per million parts (ppm) of water should be present in water that adults drink over a long period of time (7 years). For children, the recommended level is 0.6 ppm.

The Occupational Health and Safety Administration (OSHA) has limited workers' exposure to an average of 50 ppm in workplace air for an 8-hour workday, 40-hour workweek.

Glossary

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Leach: To be removed or washed away by water.

Solvent: A substance that dissolves another substance.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for 1,2,3-trichloropropane. 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.