

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

SUMMARY: Exposure to 1,3-dichloropropene occurs mainly on farms where it is used to treat crops or in factories where it is made. When breathed at very high levels, 1,3-dichloropropene may irritate the skin, eyes, nose, and throat, and other effects. This chemical has been found in at least 94 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is 1,3-dichloropropene?

(Pronounced 1,3-dī klôr'ō prō'pēn)

1,3-Dichloropropene is a manufactured chemical that does not occur naturally in the environment. It is a colorless liquid with a sweet smell.

There are two forms of 1,3-dichloropropene: cis-1,3-dichloropropene and trans-1,3-dichloropropene. These forms are very similar to each other and are usually combined in different amounts to form mixtures.

It is used mainly in farming to kill nematodes, which are pests that eat the roots of crops. It is often sprayed undiluted directly on the soils of vegetable and tobacco crops.

Much smaller amounts are used to dissolve or to make other chemicals.

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

- 1,3-Dichloropropene rapidly evaporates from water and soil into the air where it is broken down by sunlight.
- When in soil, it is likely to be broken down by small organisms.
- It dissolves in water and breaks down slowly in water.

- It may travel deeper into the ground and reach underground water supplies; however, in states where it is often used, very little has been found in the groundwater.
- Other chemicals often found in hazardous waste sites may slow the breakdown of 1,3-dichloropropene.
- We do not know if 1,3-dichloropropene accumulates in fish. Studies with animals show that most of it leaves the body within 2 days.

How might I be exposed to 1,3-dichloropropene?

- Breathing contaminated air or touching it during its use to treat farm crops.
- Breathing contaminated workplace air or air around hazardous waste sites that contain it.
- Drinking contaminated water near where it's produced or used, or near hazardous waste sites that contain it.

How can 1,3-dichloropropene affect my health?

Most of the adverse health effects from 1,3-dichloropropene come from breathing or touching it when it's produced or used on farm crops. Workers who breathed high

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

levels of 1,3-dichloropropene had irritated skin, eyes, nose, and throat, and coughing, nausea, headache, and fatigue. Short-term high level and long-term lower level studies in animals also show damage to the nose and lung tissues.

The effects from ingesting 1,3-dichloropropene are not known. Animal studies have reported damage to the stomach lining, lung congestion, difficulty walking, and effects on the liver and kidneys from ingesting high levels.

The skin of some workers who made a pesticide that contained 1,3-dichloropropene became sensitive to further exposure. When 1,3-dichloropropene was applied to the skin of animals, irritation of the skin, hair loss, and bleeding from the lungs and stomach occurred.

How likely is 1,3-dichloropropene to cause cancer?

The Department of Health and Human Services has determined that 1,3-dichloropropene may reasonably be anticipated to be a carcinogen.

Studies in animals show an increase in tumors of the stomach, urinary bladder, and lungs from ingestion of 1,3-dichloropropene. Studies in people suggest that 1,3-dichloropropene may be carcinogenic, but no definite conclusion can be made.

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

Tests are available to measure the amount of 1,3-dichloropropene or its breakdown products in blood and urine. However, the presence of 1,3-dichloropropene or its breakdown products could also mean that you were exposed to some other chemical that breaks down into 1,3-dichloropropene.

These tests are only accurate for recent exposures, because 1,3-dichloropropene leaves the body within 1 to 2 days. These tests can't determine if adverse health effects will occur from exposure to 1,3-dichloropropene.

Has the federal government made recommendations to protect human health?

The Environmental Protection Agency (EPA) requires that discharges or spills of 100 pounds or more of 1,3-dichloropropene into the environment be reported.

The National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) have recommended an occupational exposure limit of 1 part 1,3-dichloropropene per million parts of workplace air (1 ppm). These agencies advise avoiding eye and skin contact because this may be a route of significant exposure.

Glossary

Carcinogen: A substance that can cause cancer.

Ingesting: Taking food or drink into your body.

ppm: Parts per million.

Short-term: Lasting 14 days or less.

Long-term: Lasting one year or longer.

Tumor: An abnormal mass of tissue.

References

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

