1,2-Dichloroethene - ToxFAQs™

What is 1,2-dichloroethene?

1,2-Dichloroethene is a man-made chemical. It is a flammable, colorless liquid with a sweet smell. There are two forms of 1,2-dichloroethene; one is called cis-1,2-dichloroethene and the other is trans-1,2-dicloroethene. Sometimes, both are present in a mixture.

1,2-Dichloroethene is used to make other chemicals in industry. It may also be used in refrigerants, pharmaceuticals manufacturing, or to remove fat from fish or meat.

What happens to 1,2-dichloroethene in the environment?

1,2-Dichloroethene can get into the environment when it is being made or used by industry. 1,2-dichloroethene quickly evaporates into the air. Once in air, 1,2-dichloroethene takes approximately 5–12 days to break down and no longer be found in the atmosphere..

When released to moist soil surfaces or to lakes, rivers, and other bodies of water, most of the 1,2-dichloroethene evaporates into the air. In the soil, a small amount may dissolve in water and travel deeper into the ground, possibly contaminating groundwater. 1,2-Dichloroethene is most often found in the groundwater at contaminated sites along with other chlorinated organic compounds. It does not build up in plants or fish.

How can I be exposed to 1,2-dichloroethene?

1,2-Dichloroethene is irritating to the eyes and skin.

It is possible that you could be exposed to very small amounts of 1,2-dichloroethene from breathing contaminated air (more likely in a city) or drinking contaminated water (more likely if you use well-water). When bathing and showering with contaminated water, you may be exposed through your skin. If you shower or bathe with contaminated water, you may also breathe in 1,2-dichloroethene if it is released into the air. In a few cases where the groundwater is shallow, vapors can move through the soil and into nearby homes. If you live near a hazardous waste site or landfill, you may be more likely to be exposed.

People working with 1,2-dichloroethene can be exposed by breathing contaminated air or through exposure of skin to contaminated air.

How can 1,2-dichloroethene affect my health?

There is not much information available on how 1,2-dichloroethene affects people. Most of the information comes from studies in animals. There are some breakdown products that can be a hazard to health.

1,2-Dichloroethene can irritate the eyes of animals when high amounts are in the air or placed in the eyes. The eyes of these animals become irritated, red, and/or watery. When large amounts are placed on the skin of rabbits, 1,2-dichloroethene caused irritation, swelling, cracking, and scaling. Changes in the immune system were seen in mice that ate 1,2-dichloroethene for a long period of time. Some animals that breathed in or ate very high doses of this chemical became drowsy.

1,2-Dichloroethene

Can 1,2-dichloroethene cause cancer?

There are only a few studies that looked at 1,2-dichloroethene in people. No increase in cancer was seen in the children of pregnant women, or in men who drank water contaminated with 1,2-dichloroethene. Also, no increase in cancer was seen in people exposed at work.

There are currently no studies in animals looking at the cancer-causing effects of 1,2-dichloroethene.

The U.S. Department of Health and Human Services (DHHS) has not evaluated the carcinogenicity (cancer causing ability) of 1,2-dichloroethene.

The U.S. Environmental Protection Agency (EPA) has not classified the carcinogenicity of 1,2-dichloroethene due to lack of information.

The International Agency for Research on Cancer (IARC) has not evaluated the carcinogenicity of 1,2-dichloroethene.

Can I get a medical test to check for 1,2-dichloroethene?

1,2-Dichloroethene can be measured in blood and expired air. Blood 1,2-dichloroethene levels have been used to quantify exposure in the U.S. general population. cis-1,2-Dichloroethene can be measured in expired air; however, its usefulness as a biomarker may be limited since a half-life of <30 minutes was estimated in a study of two volunteers. Exposure does not necessarily mean that adverse health effects will occur. If you think you have been exposed to 1,2-dichloroethene, call your doctor, nurse, or poison control center.

How can I protect myself and my family from 1,2-dichlorethene?

Most people don't need to take any special steps to avoid 1,2-dichloroethene in their daily lives. Keep children from playing near landfills or industrial sites to avoid coming in contact with 1,2-dichloroethene. If your water comes from a well, you can have your water tested and, if necessary, take the recommended steps to remove this chemical from your water.

For more information:

Call **CDC-INFO** at 1-800-232-4636, or submit your question online at https://wwwn.cdc.gov/dcs/ContactUs/Form

Go to ATSDR's Toxicological Profile for 1,2-Dichloroethene: https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=464&tid=82

Go to ATSDR's Toxic Substances Portal: https://wwwn.cdc.gov/TSP/index.aspx

Find & contact your ATSDR Regional Representative at https://www.atsdr.cdc.gov/regional-offices/index.html