Chloroform - ToxFAQs™

What is chloroform?

Chloroform is a colorless liquid with a pleasant, nonirritating odor and a slightly sweet taste. It occurs naturally in the environment mainly in wet environments (tropical oceans, forest soil, rice fields, swamplands, and peat moorlands) but also can be found in dry grasslands and is released during volcanic eruptions and when organic matter is burned. It can also be formed in small amounts when chlorine is added to water. Chloroform is also man-made.

In the past, chloroform was used as an inhaled anesthetic during surgery, but it is no longer used during surgery due to availability of safer alternatives. Currently, chloroform is used as a solvent and to make other chemicals.

What happens to chloroform in the environment?

Chloroform can enter the environment from manufacturing facilities or from treating water with chlorine. Since chloroform is made naturally in various environments and gets into the environment from human activities, it is likely found almost everywhere.

Chloroform evaporates quickly into the air from water and soil. In the air, it breaks down slowly, so it may travel long distances. Since chloroform dissolves easily in water, it can come back to the ground with the rain. Chloroform does not stick very well to soil and can therefore travel through the soil into the groundwater. Chloroform does not build up in large amounts in plants or animals.

How can I be exposed to chloroform?

Most people are exposed to very low levels of chloroform in indoor and outdoor air, food, and drinking water. If your home water supply is treated with chlorine, household activities such as showering, bathing, washing clothes or dishes, or preparing food may expose you to chloroform.

General population exposure to chloroform is expected to be very low. Individuals who live near hazardous waste sites, or work with chloroform or chlorinated water may be exposed to higher levels.

People who work in industries that use or manufacture chloroform may have increased risk for exposure. People who live near places that chlorinate water or near contaminated hazardous waste sites may also have increased risk of exposure. Increased exposure may also occur for individuals who spend a lot of time around chlorinated water, such as swimmers, lifeguards, or cleaners.

How can chloroform affect my health?

Breathing low-to-moderate levels of chloroform for a short amount of time can cause you to become dizzy, tired, or give you a headache. At high levels, you may also have trouble breathing and may pass out. Breathing or drinking a large amount of chloroform can cause severe liver and kidney damage, and at very high exposure levels, can cause death.

Studies in animals showed that breathing chloroform caused damage to their nose that worsened with longer exposure periods. Lung damage also occurred in animals that breathed and/or drank chloroform. There is not clear evidence of developmental effects in pups born to animals exposed during pregnancy.

Chloroform

Can chloroform cause cancer?

The ability of chloroform to cause cancer in people has not been well studied.

Tumors in the kidneys were seen in mice that breathed chloroform for a long time. Animals that drank chloroform for a long time developed cancer of the liver and kidneys.

The U.S. Department of Health and Human Services (DHHS) determined that chloroform is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity in experimental animals.

The U.S. Environmental Protection Agency (EPA) classified chloroform as likely to be carcinogenic to human by all routes of exposure at high dose levels that result in cell damage; it is not likely to be carcinogenic by any route at lower dose levels that do not cause cell damage.

The International Agency for Research on Cancer (IARC) determined that chloroform is possibly carcinogenic to humans based on inadequate evidence in humans and sufficient evidence in experimental animals.

Can I get a medical test to check for chloroform?

There are tests to measure chloroform in your breath, blood, urine, breast milk, and body tissues. Chloroform does not stay in your body long, so these tests need to be done soon after you were exposed. These tests cannot predict whether you will have health problems from the exposure. Doctor's offices do not routinely offer these tests. If you think you have been exposed to this or any other chemical, talk to your doctor or nurse or call poison control.

How can I protect myself and my family from chloroform?

If your drinking water is supplied by a public water system, you can contact them for information on chloroform levels in the water. If you have a private well for water, your local health department may be able to tell you if this chemical has been found in water in your area. You may also want to get your water tested by a certified laboratory.

If you work at a place that uses chloroform, make sure you are following all safety guidelines. Do not let your children play near facilities manufacturing chloroform or hazardous waste sites.

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 Chloroform: https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=53&tid=16

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

Find & contact your ATSDR Regional Representative at http://www.atsdr.cdc.gov/DRO/dro_org.html