

This fact sheet answers the most frequently asked health questions (FAQs) about hexachloroethane. 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.

HIGHLIGHTS: Hexachloroethane is a colorless solid that gradually evaporates when it is exposed to air. It is used in the manufacture of aluminum and by the military for smoke-producing devices. Exposure to hexachloroethane can be irritating to the skin, nose, lungs, and eyes. Hexachloroethane has been found in at least 45 of the 1,416 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is hexachloroethane?

(Pronounced hĕk'sə klōr'ō ěth'ān')

Hexachloroethane is a colorless solid that gradually evaporates when it is exposed to air. It is also called HCE, perchloroethane, and carbon hexachloride. Its vapors smell like camphor. In the United States, about half of the hexachloroethane is used by the military for smoke-producing devices. It is also used to remove air bubbles in melted aluminum.

Hexachloroethane may be present as an ingredient in some fungicides, insecticides, lubricants, and plastics.

Hexachloroethane does not occur naturally in the environment. It is no longer made in the United States, but it is formed as a by-product in the production of some chemicals. Some hexachloroethane can be formed by incinerators when materials containing chlorinated hydrocarbons are burned.

Hexachloroethane itself does not catch fire easily. Some hexachloroethane can also be formed when chlorine reacts with carbon compounds in drinking water.

What happens to hexachloroethane when it enters the environment?

- Hexachloroethane can be released to the environment during its production, use, transport, or disposal.

- In air, hexachloroethane does not break down to other compounds.
- Some hexachloroethane that is in lakes or streams and surface soils will evaporate into the air.
- Microscopic organisms can break it down more easily without oxygen than with oxygen.
- Hexachloroethane does not appear to build up in plants or animals used for food.

How might I be exposed to hexachloroethane?

- If you work in an industry that uses hexachloroethane, such as aluminum smelting, you could be exposed by breathing it or touching it.
- If you live near a hazardous waste site, you might be exposed to hexachloroethane by breathing contaminated air, by drinking contaminated water, or by touching contaminated soils.
- You might be exposed to it from the air near military installations where smoke pots and grenades that contain hexachloroethane are used during training.
- You are not likely to be exposed to hexachloroethane from your food.

How can hexachloroethane affect my health?

Mild skin irritation has been reported by workers at a muni-

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

tions factory who were exposed to low levels of hexachloroethane. The workers were wearing protective clothing that greatly reduced exposure. No other information is available concerning health effects in people exposed to hexachloroethane.

Based on animal studies, hexachloroethane in air can irritate your nose and lungs and cause some buildup of mucus in your nose, much like an allergy. It can also irritate your eyes and make them tear.

If you breathe high levels of hexachloroethane vapor, your facial muscles may twitch or you may have difficulty moving. However, these effects have been seen in animals exposed to levels far greater than those found during its use or those expected in areas near a hazardous waste site.

Hexachloroethane is not a very toxic substance. If you are exposed to a large amount for a long time, your liver could be affected. There is also a slight chance that your kidneys could be damaged. Animal studies have not shown hexachloroethane to cause birth defects or to affect reproduction.

How likely is hexachloroethane to cause cancer?

Liver tumors developed in mice that were orally exposed to hexachloroethane for their whole lifetime. Hexachloroethane will not necessarily have the same effect on people. Male rats that were exposed to hexachloroethane for their lifetime developed kidney tumors. This type of tumor is not found in people, so it is unlikely that exposure to hexachloroethane would cause you to develop cancer of the kidney.

The Department of Health and Human Services (DHHS) has determined that hexachloroethane may reasonably be anticipated to be a carcinogen.

Is there a medical test to show whether I've been exposed to hexachloroethane?

Samples of your blood, urine, or feces can be tested to see if

you were exposed to hexachloroethane. These tests aren't available at most doctors' offices, but can be done at special laboratories that have the right equipment. They are useful only if you were exposed 24–48 hours before you saw the doctor and cannot predict whether you will experience any health effects.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) has set a limit of 1 part hexachloroethane per million parts of workplace air (1 ppm) over an 8-hour workday, 40-hour workweek.

The EPA suggests that water consumed over a lifetime contain no more than 1 part hexachloroethane per billion parts water (1 ppb).

Glossary

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To enter the air as a vapor.

Fungicide: A substance that kills fungus.

Insecticide: A substance that kills insects.

Tumor: An abnormal mass of tissue.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Hexachloroethane produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

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.

