

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

**HIGHLIGHTS:** Chlorobenzene is used as a solvent for some pesticide formulations, as a degreaser, and to make other chemicals. High levels of chlorobenzene can damage the liver and kidneys and affect the brain. It has been found at 97 of the 1,177 National Priorities List sites identified by the Environmental Protection Agency (EPA).

### What is chlorobenzene?

(Pronounced klôr'ō-bĕn/zĕn)

Chlorobenzene is a colorless, flammable liquid with an aromatic, almond-like odor. Some of it will dissolve in water, but it readily evaporates into air. It does not occur naturally in the environment.

Chlorobenzene production in the United States has declined by more than 60% from its peak in 1960. It was used in the past to make other chemicals, such as phenol and DDT. Now chlorobenzene is used as a solvent for some pesticide formulations, to degrease automobile parts, and as a chemical intermediate to make several other chemicals.

### What happens to chlorobenzene when it enters the environment?

- Chlorobenzene released to air is slowly broken down by reactions with other chemicals and sunlight or can be removed by rain.
- In water, chlorobenzene will rapidly evaporate to the air and/or be broken down by bacteria.
- When released to soil, it is broken down rapidly by bacteria, but some will evaporate to the air and some may filter into the groundwater.

- Chlorobenzene does not build up in the food chain.

### How might I be exposed to chlorobenzene?

- If you work where chlorobenzene is made or used you could be exposed by breathing air with chlorobenzene vapors or by spilling or splashing chlorobenzene on your skin.
- People that live near a waste site containing chlorobenzene could be exposed by drinking contaminated groundwater, breathing vapors released to the air, or getting contaminated soil on their skin.
- You could be exposed by eating food contaminated with chlorobenzene but there is not enough information to determine how often this occurs.

### How can chlorobenzene affect my health?

Workers exposed to high levels of chlorobenzene in the air complained of headaches, nausea, sleepiness, numbness, and vomiting. We cannot be certain that all of these effects were due to chlorobenzene exposure because the workers may have been exposed to other chemicals.

Animal studies indicate that the liver, kidney, and central nervous system are affected by exposure to chlorobenzene.

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

Effects on the central nervous system from breathing chlorobenzene include unconsciousness, tremors, restlessness, and death. Longer exposure has caused liver and kidney damage. The limited data available indicate that chlorobenzene does not cause birth defects or infertility.

### **How likely is chlorobenzene to cause cancer?**

It is not known whether chlorobenzene causes cancer in people. Although chlorobenzene did not produce cancer in animal studies with rats and mice, liver nodules which can lead to cancer were produced in male rats. The EPA has determined that chlorobenzene is not classifiable as to human carcinogenicity based on inadequate evidence in both humans and animals.

### **Is there a medical test to show whether I've been exposed to chlorobenzene?**

Exposure to chlorobenzene can be determined by measuring it or its metabolites in urine, exhaled air, blood, and body fat, but these tests cannot be used to predict whether harmful health effects will occur. These tests are not usually done in the doctors' office because special equipment is needed.

### **Has the federal government made recommendations to protect human health?**

The EPA has set a Maximum Contaminant Level (MCL) of 0.1 parts per million (0.1 ppm) for chlorobenzene in drinking water. Concentrations in drinking water for short-term exposures (up to 10 days) should not exceed 2 ppm. The EPA recommends that levels of chlorinated benzenes (a group of chemicals that includes chlorobenzene) in lakes and streams

should be limited to 0.488 ppm to prevent possible health effects from drinking water or eating fish contaminated with this group of chemicals. Any release to the environment greater than 100 pounds of chlorobenzene must be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a workplace air concentration limit of 75 ppm over an 8-hour workday, 40-hour workweek.

The federal recommendations have been updated as of July 1999.

### **Glossary**

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To change into a vapor or a gas.

National Priorities List: A list of the nation's worst hazardous waste sites.

Pesticide: A substance that kills pests.

ppm: Parts per million.

Solvent: A substance that dissolves another substance.

Tremor: Trembling or shaking caused by disease or stress.

### **References**

Agency for Toxic Substances and Disease Registry (ATSDR). 1990. Toxicological profile for chlorobenzene. 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.

