



OPPT Chemical Fact Sheets

Chlorobenzene (CAS No. 108-90-7)



Chemicals can be released to the environment as a result of their manufacture, processing, and use. EPA has developed information summaries on selected chemicals to describe how you might be exposed to these chemicals, how exposure to them might affect you and the environment, what happens to them in the environment, who regulates them, and whom to contact for additional information. EPA is committed to reducing environmental releases of chemicals through source reduction and other practices that reduce creation of pollutants.

WHAT IS CHLOROBENZENE, HOW IS IT USED, AND HOW MIGHT I BE EXPOSED?

Chlorobenzene (also called monochlorobenzene or MCB) is a flammable liquid. It does not occur naturally. It is produced in large amounts (231 million pounds in 1992) in the United States by three companies. U.S. demand is likely to remain constant over the next several years. Because of environmental concerns for chlorinated organic chemicals in general, future U.S. demand for MCB is likely to decline. The largest users of MCB are companies that make nitrochlorobenzene. Companies also use MCB to make adhesives, paints, paint removers, polishes, dyes, and drugs. In the past companies have used MCB to make phenol and related chemicals, pesticides (like DDT), and aniline.

Exposure to chlorobenzene can occur in the workplace or in the environment following releases to air, water, land, or groundwater. Exposure can also occur when people use paints and paint removers that contain MCB. Chlorobenzene enters the body when people breathe air contaminated with MCB or consume food or water contaminated with MCB. It can also be absorbed through skin contact. MCB does not remain in the body due to its breakdown and removal.

WHAT HAPPENS TO CHLOROBENZENE IN THE ENVIRONMENT?

Chlorobenzene can evaporate when exposed to air. It dissolves slightly when mixed with water. Most releases of chlorobenzene to the U.S. environment are to air. MCB also can evaporate from water and soil exposed to air. Once in air, MCB breaks down to other chemicals. Because it is a liquid that does not bind well to soil, MCB that makes its way into the ground can move through the ground and enter groundwater. Plants and animals are not likely to store chlorobenzene.

HOW DOES CHLOROBENZENE AFFECT HUMAN HEALTH AND THE ENVIRONMENT?

Effects of chlorobenzene on human health and the environment depend on how much chlorobenzene is present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs.

Contact with chlorobenzene liquid or vapor can irritate the skin, the eyes, the nose, and the throat. Exposure to large amounts of chlorobenzene can also cause adverse nervous system effects, including unconsciousness. These effects disappear when exposure stops. These acute effects are not likely to occur at levels of chlorobenzene that are normally found in the U.S. environment.

Workers breathing large amounts of MCB can experience headaches, muscle spasms, and adverse effects on the bone marrow. Other human health effects associated with repeat exposure to small amounts of chlorobenzene over long periods of time are not known. Laboratory studies show that repeat exposure to chlorobenzene in air affects the nervous system of animals. Repeat exposure to large amounts of MCB can also adversely affect the liver, kidneys, and the blood of animals. The chlorinated benzene industry has submitted to EPA results of EPA requested reproductive effects testing on MCB. Results show that exposure to moderate amounts of chlorobenzene in air causes testicular damage in animals.

Chlorobenzene is moderately toxic to aquatic organisms. Chlorobenzene is not likely to cause environmental harm at levels normally found in the U.S. environment.

WHAT EPA OFFICES OR OTHER FEDERAL AGENCIES OR OTHER GROUPS CAN I CONTACT FOR ADDITIONAL INFORMATION ON CHLOROBENZENE?

EPA OFFICE	STATUTE	PHONE NUMBER
Pollution Prevention & Toxics	Pollution Prevention Act (PPA)	(202) 260-1023
	Emergency Planning and Community Right-to-Know Act (EPCRA) (§ 313/TRI)	(800) 535-0202
Air	Toxic Substances Control Act (TSCA) (§4, §8A, §8D)	(202) 554-1404
	Clean Air Act	(919) 541-0888
Solid Waste & Emergency Response	Resource Conservation and Recovery Act (RCRA)	(800) 535-0202
	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	(800) 535-0202
Water	Safe Drinking Water Act	(800) 426-4791
	Clean Water Act	(202) 260-7588

OTHER FEDERAL AGENCY/DEPARTMENT OR GROUP	PHONE NUMBER
Agency of Toxic Substances & Disease Registry	(404) 639-6000
American Conference of Governmental Industrial Hygienists	(513) 742-2020
Consumer Product Safety Commission	(301) 504-0994
Food & Drug Administration	(301) 443-3170
National Institute for Occupational Safety & Health	(800) 356-4674
Occupational Safety & Health Administration (Check local phone book for phone number under Department of Labor)	

The Support Document for this and other OPPT Chemical Fact Sheets can be found on the Internet at:
<http://www.epa.gov/chemfact>