



# OPPT Chemical Fact Sheets

## 1,2,4-Trichlorobenzene (CAS No. 120-82-1)



**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 1,2,4-TRICHLOROBENZENE, HOW IS IT USED, AND HOW MIGHT I BE EXPOSED?

1,2,4-Trichlorobenzene (also known as trichlorobenzene or TCB) is a nonflammable liquid. It does not occur naturally. TCB is produced in large amounts (estimated to be between 22 million and 32 million pounds in 1990) by two companies in the United States. Because of environmental concerns for chlorinated organic chemicals U.S. demand for TCB is likely to fall. The largest users of TCB are companies that use it as a solvent to make dyes and other chemicals. It can also be added to dielectric fluids, transformer oils, cleaners, and lubricants.

Exposure to 1,2,4-trichlorobenzene can occur in the workplace or in the environment following releases to air, water, land, or groundwater. TCB enters the body when people breathe air or consume food or water contaminated with TCB. It can also be absorbed through skin contact. Once in the body small amounts of TCB can remain, stored in fat tissue.

### WHAT HAPPENS TO TCB IN THE ENVIRONMENT?

1,2,4-Trichlorobenzene evaporates slowly when exposed to air. It mixes poorly in water. Most direct releases of TCB to the U.S. environment are to air. TCB also evaporates slowly from surface water and soil exposed to air. Once in air, it breaks down to other chemicals. Unless it evaporates, TCB is likely to stay in soil and water. Microorganisms that live in soil can break down small amounts of TCB. Because TCB sticks to soil, it is not likely to move into deep soil. If released into deep soil, TCB can move through the ground and enter groundwater. Plants and animals can store small amounts of TCB.

## HOW DOES TCB AFFECT HUMAN HEALTH AND THE ENVIRONMENT?

Effects of 1,2,4-trichlorobenzene on human health and the environment depend on how much TCB 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.

1,2,4-Trichlorobenzene vapor irritates the eye and respiratory tract. Direct contact with TCB irritates the skin and may cause dermatitis. Liver damage and nervous system effects such as tremors have occurred in experimental animals exposed to high levels of TCB for short periods of time. These acute effects are not likely to occur at levels of TCB that are normally found in the U.S. environment.

Human health effects associated with exposure of small amounts of 1,2,4-trichlorobenzene over long periods of time are not known. Several repeat-dose laboratory animal studies have shown that TCB can adversely affect the liver, the kidney, and the adrenal gland. An animal study has shown that repeat exposure of mothers to large amounts of TCB in drinking water causes adverse effects of the adrenal gland in pups. The chlorinated benzene industry has completed cancer studies on TCB in animals in response to an EPA request for testing. Large amounts of 1,2,4-trichlorobenzene in the diet of these animals causes cancer in mice but not in rats. The information has limited use in assessing the potential of TCB to cause cancer in humans.

The chlorinated benzene industry has also completed aquatic toxicity studies on 1,2,4-trichlorobenzene in response to an EPA request for testing. Results show that TCB is highly toxic to aquatic life.

## WHAT EPA OFFICES OR OTHER FEDERAL AGENCIES CAN I CONTACT FOR ADDITIONAL INFORMATION ON THE REGULATION OF TCB?

EPA OFFICES	STATUTE	PHONE NUMBER
Pollution Prevention and Toxics	Pollution Prevention Act (PPA)	(202)260-1023
	Emergency Planning and Community Right-to-Know Act (EPCRA) (§ 313/TRI)	(800)535-0202
	Toxic Substances Control Act (TSCA) (§4, 8A, 8D)	(202)554-1404
Pesticides	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)	(800)858-7378
Air	Clean Air Act	(919)541-0888
Solid Waste and Emergency Response	Resource Conservation and Recovery Act (RCRA)	(800)535-0202
	Comprehensive Environmental Liability Act (CERCLA)	(800)535-0202
Water	Clean Water Act	(202)260-7588
	Safe Drinking Water Act (Drinking Water Standard: 0.07 mg/L)	(800)426-4791

OTHER FEDERAL AGENCIES/DEPARTMENTS	PHONE NUMBER
Agency for Toxic Substances & Disease Registry	(404) 639-6000
American Conference of Governmental Industrial Hygienists	(513) 742-2020
Consumer Product Safety Commission	(301) 504-0994
Food and Drug Administration	(301) 443-3170
National Institute for Occupational Safety and 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>