Consumer Factsheet on: CHLOROBENZENE

List of Contaminants

As part of the Drinking Water and Health pages, this fact sheet is part of a larger publication:
National Primary Drinking Water Regulations

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

What is Chlorobenzene and how is it used?

Chlorobenzene is a colorless organic liquid with a faint, almond-like odor. The greatest use of chlorobenzene is in the manufacture of other organic chemicals, dyestuffs and insecticides. It is also a solvent for adhesives, drugs, rubber, paints and dry-cleaning, and as a fiber-swelling agent in textile processing.

The list of trade names given below may help you find out whether

you are using this chemical at home or work.

Trade Names and Synonyms:

Benzene chloride
Chlorbenzol
Monochlorobenzene
Phenyl chloride
IP Carrier T 40
Tetrosin SP

Why is Chlorobenzene being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for chlorobenzene has been set at 0.1 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.1 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

What are the Health Effects?

Short-term: EPA has found chlorobenzene to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: anesthetic effects and impaired liver and kidney function.

Long-term: Chlorobenzene has the potential to cause the following effects from a lifetime exposure at levels above the MCL: liver, kidney and central nervous system damage.

How much Chlorobenzene is produced and released to the environment?

Production of chlorobenzene in 1988 was 270 million pounds, and was expected to decrease. Major environmental releases of chlorobenzene are due to its use as a solvent in pesticides.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, chlorobenzene releases to water totalled over 326,000 lbs. Releases to land totalled nearly 37,000 lbs. These releases were primarily from alkali and chlorine industries which use chlorobenzene in chlorination processes. Most of these releases occurred in West Virginia.

What happens to Chlorobenzene when it is released to the environment?

Releases into water and onto land will either evaporate or be slowly degraded by microbes in the soil or water. Since it does not bind to soils, it can be expected to leach into the groundwater. Little accumulation is expected in fish and food products.

How will Chlorobenzene be Detected in and Removed from My Drinking Water?

The regulation for chlorobenzene became effective in 1989. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if chlorobenzene is present above 0.5 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of chlorobenzene so that it is consistently below that level. The following treatment methods have been approved by EPA for removing chlorobenzene: Granular activated charcoal in combination with Packed Tower Aeration.

How will I know if Chlorobenzene is in my drinking water?

If the levels of chlorobenzene exceed the MCL, 0.1 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Drinking Water Standards:

Mclg: 0.1 ppm

Mcl: 0.1 ppm

Chlorobenzene Releases to Water and Land, 1987 to 1993 (in pounds):

	Water	Land
TOTALS (in pounds)	**326,017**	**36,910**

Top Five States *		
WV	262,653	263
OH	20,598	12,500
NJ	13,710	13,261
LA	16,460	265
SC	1,401	5,939
Major Industries		
Alkalis, chlorine	261,058	67
Plastics, resins	23,756	13,312
Cyclic crudes, dyes	21,657	6,637
Indus. organics	13,460	9,375
Gum, wood chems	0	4,909

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone books government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call: EPAs Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.