Consumer Factsheet on: CARBON TETRACHLORIDE

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 Carbon Tetrachloride and how is it used?

Carbon tetrachloride is a clear heavy organic liquid with a sweet aromatic odor similar to chloroform. Most of it is used to make chlorofluorocarbon propellants and refrigerants, though this has been declining steadily. Other uses have included: as dry cleaning agent and fire extinguisher, in making nylon, as a solvent for rubber cement, soaps, insecticides, etc.

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:

Perchloromethane
Methane tetrachloride
Benzinoform
Univerm
Necatorina
Facsiolin
Flukoids
R10 (refrigerant)
Tetraform
Tetrasol
Freon 10
Halon 104

Why is Carbon Tetrachloride 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 carbon tetrachloride has been set at zero 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 5 part per billion (ppb) 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 carbon tetrachloride to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: liver, kidney and lung damage.

Long-term: Carbon tetrachloride has the potential to cause the following effects from a lifetime exposure at levels above the MCL: liver damage; cancer.

How much Carbon Tetrachloride is produced and released to the environment?

Production of carbon tetrachloride in 1988 was 761 million lbs Carbon tetrachloride is released to land and water from landfills, in wastewater from industries, from agricultural activities. From 1987 to 1993, according to the Toxic Release Inventory, carbon tetrachloride releases to water and land totalled nearly 76,000 lbs. These releases were primarily from chemical manufacturing industries. The largest releases occurred in Texas.

What happens to Carbon Tetrachloride when it is released to the environment?

Carbon tetrachloride evaporates quickly from surface waters and soil. It does not bind to soil and may leach into ground water. It has a low potential to accumulate in aquatic life.

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

The regulation for carbon tetrachloride 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 carbon tetrachloride 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 carbon tetrachloride so that it is consistently below that level. The following treatment methods have been approved by EPA for removing carbon tetrachloride : Granular activated charcoal in combination with Packed tower aeration.

How will I know if Carbon Tetrachloride is in my drinking water?

If the levels of carbon tetrachloride exceed the MCL, 5 ppb, 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: zero

Mcl: 5 ppb

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

		Water	Land
TOTALS (in pounds)		**52,719**	**23,078**
Top Five States*			
TX	22,922	75	
WV	4	14,443	
LA	7,720	2,213	
AL	8,205	0	
CA	20	2,400	
Major Industries*			
Alkalies, chlorine		31,147	17,545
Inorganic chemicals		8,796	460
Petroleum refining		4,450	1,530
Misc. Indust. Organics		3,266	377
Agricultural chems.		817	2,400

* 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.