

US EPA ARCHIVE DOCUMENT

Consumer Factsheet on: 1,2,4-TRICHLOROBENZENE

[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 1,2,4-TCB and how is it used?

1,2,4-Trichlorobenzene (1,2,4-TCB) is an aromatic, colorless organic liquid. The greatest use of 1,2,4-trichlorobenzene is primarily as a dye carrier. It is also used to make herbicides and other organic chemicals; as a solvent; in wood preservatives; in abrasives. It was once used as a soil treatment for termite control.

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:

Hostetex L-PEC
Trichlorobenzol

Why is 1,2,4-TCB 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 1,2,4-trichlorobenzene has been set at 0.07 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 also been set at 0.07 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 1,2,4-trichlorobenzene to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: changes in liver, kidneys and adrenal glands

Long-term: 1,2,4-Trichlorobenzene has the potential to cause the following effects from a lifetime exposure at levels above the MCL: increased adrenal gland weights

How much 1,2,4-TCB is produced and released to the environment?

Current production figures on 1,2,4-trichlorobenzene are not available. EPA estimated 1983 production to be in the range of 3 to 8 million lbs., with imports over 3 million lbs. Major environmental releases of 1,2,4-trichlorobenzene are due to its manufacture and use as a dye carrier.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, 1,2,4-trichlorobenzene releases to land and water totalled over 180,000 lbs. These releases were primarily from textile finishing industries. The largest releases occurred in North Carolina and Virginia.

What happens to 1,2,4-TCB when it is released to the environment?

1,2,4-Trichlorobenzene (1,2,4-TCB) binds well to the soil and therefore will not leach appreciably to the groundwater when released to land. However, 1,2,4-TCB has been detected in some groundwater samples which indicates that it can be transported there by some process. If released to water it will largely evaporate within a few hours. It has some potential to accumulate in fish.

How will 1,2,4-TCB be Detected in and Removed from My Drinking Water?

The regulation for 1,2,4-trichlorobenzene became effective in 1994. 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 1,2,4-trichlorobenzene 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 1,2,4-trichlorobenzene so that it is consistently below that level. The following treatment methods have been approved by EPA for removing 1,2,4-trichlorobenzene: Granular activated charcoal in combination with Packed Tower Aeration.

How will I know if 1,2,4-TCB is in my drinking water?

If the levels of 1,2,4-trichlorobenzene exceed the MCL, 0.07 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: 0.07 ppm

Mcl: 0.07 ppm

1,2,4-TCB Releases to Water and Land, 1987 to 1993 (in pounds):

	Water	Land
TOTALS (in pounds)	157,541	22,835
Top Five States*		
NC	80,253	13,209
VA	36,970	0
GA	17,639	8,951
WV	20,300	0
NY	1,150	1

Major Industries*		
Finishing plants, misc	52,249	0
Finishing plants, synth.	47,976	0
Weaving, finishing mills	20,139	8,951
Alkalies, chlorine	21,773	1
Knitting mills, misc	9,077	9,994
Knit outerwear mills	1,300	3,200

* Water/Land totals only include facilities with releases greater than 100 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.