

US EPA ARCHIVE DOCUMENT

Consumer Factsheet on: TETRACHLOROETHYLENE

[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 Tetrachloroethylene and how is it used?

Tetrachloroethylene (PCE) is a colorless organic liquid with a mild, chloroform-like odor. Its greatest use is in the textile industry, and as a component of aerosol dry-cleaning products.

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:

Ethylene tetrachloride
Perchloroethylene
PCE
Ankilostin
Didakene
Fedal-un
Nema
Perclene
Persec
Tetlen
Tetracap
Tetraleno
Tetropil
Antisal 1
Dow-per
Perawin
Perchlor
Percosolv
Perk
Perklone
Tetraguer
Tetralex
Tetravec

Why is Tetrachloroethylene 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 PCE 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 parts 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?

Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver and may have an increased risk of getting cancer.

How much Tetrachloroethylene is produced and released to the environment?

Production of tetrachloroethylene was 405 million lbs in 1986. Major releases of tetrachloroethylene to air and water are from dry cleaning and industrial metal cleaning or finishing. Water pollution can occur from tetrachloroethylene leaching from vinyl liners in some types of pipelines used for water distribution, and during chlorination water treatment.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, tetrachloroethylene releases to land and water totalled over 1 million lbs. These releases were primarily from alkali and chlorine industries which use it to make other chemicals. The largest releases occurred in Louisiana and South Carolina.

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

PCE released to soil will readily evaporate or may leach slowly to the groundwater. Its break down by soil microbes is slow. PCE released to water will primarily evaporate and has little potential for accumulating in aquatic life.

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

The regulation for tetrachloroethylene became effective in 1992. 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 PCE is present above 0.5 ppb. If it is present above this level, the system must continue to monitor this contaminant until the system has taken immediate steps to remediate the problem or the State has determined that the contaminant will remain reliably and consistently below the MCL.

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

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

If the levels of PCE 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

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

TOTALS (in pounds)	Water 297,602	Land 750,104
Top Ten States*		
LA	23,639	610,518
SC	104,728	0
NH	62,150	0
NC	42,192	13,102
IL	0	40,500
TX	36,144	720
OH	0	32,170
IN	1,300	27,000
CO	0	11,000
IA	5,112	0
Major Industries*		
Alkalis, chlorine	63,472	611,242
Leather tanning, finishing	62,150	0
Cotton fabric finishing	51,577	0
Misc textile finishing	48,082	2,000
Knit outerwear mills	45,808	0
Misc. apparel, access.	0	40,500
Transportation Equip.	3,750	27,000
Ammunition	0	20,575
Misc Chem. preparations	0	11,102
Petroleum refining	0	11,000
Ordnance, accessories	0	10,100

* 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.