

TETRACHLOROETHYLENE

Also known as: Perchloroethylene, Perc, PCE, PerSec, Tetraneq
Chemical reference number (CAS): 127-18-4

WHAT IS TETRACHLOROETHYLENE?

Tetrachloroethylene (perc) is a nonflammable, liquid solvent widely used in dry cleaning, wood processing, fabric manufacturing, and metal degreasing. In homes, it may be found in suede protectors, paint removers, furniture stripper, water repellents, silicone lubricants, spot removers, glues, and wood cleaners. Perc evaporates slowly at room temperature and has a sweet, ether-like odor.

When perc is improperly disposed or spilled, some of it will evaporate into the air. The rest will seep into the soil. It may mix with ground water and contaminate water supplies.

HOW ARE PEOPLE EXPOSED TO TETRACHLOROETHYLENE?

People are most often exposed to perc when they use it in their work, when cleaning or doing hobbies.

Breathing: Perc evaporates into the air. People are commonly exposed to perc by breathing air containing by its vapors. Perc can contaminate home air when people use cleaning solvents or other products. Exposure can also occur when using contaminated water to shower, do laundry, or perform other household chores.

Drinking/Eating: People can be exposed when using contaminated water for drinking and preparing food.

Touching: Small amounts of perc can pass through the skin when people handle the chemical, contaminated soil, or bathe in contaminated water.

DO STANDARDS EXIST FOR REGULATING TETRACHLOROETHYLENE?

Water: The state and federal drinking water standards for perc are both set at 5 parts per billion (ppb). We suggest you stop drinking water containing more than 5 ppb. If levels of perc are above 70 ppb, you may need to avoid washing, bathing, or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of perc allowed in the air of homes, but we recommend that perc levels in a home or office are kept below 1.0 part per billion (ppb). There are workplace limits when liquid perc is used by workers, but these levels are thousands of times higher and are not acceptable for a home or office. Most people can't smell perc until levels reach 5,000 ppb. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of perc that can be released into the environment.

WILL EXPOSURE TO TETRACHLOROETHYLENE RESULT IN HARMFUL HEALTH EFFECTS?

Some workplace jobs and certain home projects can produce levels of perc high enough to cause health effects. The following symptoms may occur immediately or shortly after exposure to high levels:

- Breathing air containing more than 100 ppm of perc may cause dizziness, headache, sleepiness, confusion, nausea and difficulty speaking and walking.
- Direct contact with perc can irritate skin or eyes.
- Swallowing perc can cause mental confusion and possible loss of consciousness.

The following health effects can occur after several years of exposure to low levels of perc:

Cancer: Perc is shown to cause liver cancer, kidney cancer, and leukemia in laboratory animals.

Reproductive Effects: When a mother becomes sick from exposure to perc, the development of her fetus may also be affected. *Pregnant women should avoid contact with tetrachloroethylene.*

Organ Systems: Liver and kidney damage has been noticed among exposed workers.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking. It's also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

Health problems such as cardiovascular disease, nervous system disorders, liver disease, or alcohol abuse may increase sensitivity to the effects of tetrachloroethylene.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO TETRACHLOROETHYLENE?

Perc can be detected in the breath, blood, and urine of people who have recently been exposed to high levels. These tests require special equipment that most doctor's offices do not have, and the test results may not predict what health effects will develop. Liver and kidney function tests may be helpful in determining damage from perc exposure.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-222-1222
- Your local public health agency
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: <http://dhfs.wisconsin.gov/eh/>



Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4349 Revised 3/2008)