

Tetrachloroethylene (PCE): Health effects

What is tetrachloroethylene, where does it come from and what is it used for?

Tetrachloroethylene has a few names. It was once called perchloroethylene and hence has the acronym PCE. It can also be called:

- tetrachloroethene
- 1,1,2,2-tetrachloroethylene
- ethylene tetrachloride.

Because it was used in dry cleaning, some have called it 'dry-cleaning fluid' but not all *dry-cleaning* fluids contain tetrachloroethylene.

Tetrachloroethylene is a synthetic chemical. It is a clear, colourless, non-flammable liquid with a sweet, fruity odour like chloroform. It is volatile and readily evaporates at room temperature.

It has been used in dry cleaning, metal cleaning and degreasing, and as a fumigant in grain, and a starting material for making other chemicals.

Why is tetrachloroethylene an environmental concern?

Tetrachloroethylene is often released into the air and surface water by evaporation or in emissions from industrial and dry-cleaning plants. It can also be released from landfill sites, where it may be stored.

Tetrachloroethylene travels through soil relatively easily and therefore often contaminates groundwater, where it can remain for years. Tetrachloroethylene vapours from groundwater can travel upwards into houses built above.

How can this chemical affect health?

The health effects depend on how long you have been exposed to tetrachloroethylene and how much you have been exposed to, which depends upon the concentration (level) in the air or water.

Exposure occurs by inhalation, ingestion or skin contact and can affect the central nervous system (CNS), eyes, kidney, liver, lungs, mucous membranes and skin. CNS effects are the most common.

Exposure over short periods of time may make you dizzy or sleepy and if you inhale moderate amounts it may cause headaches.

Exposure for long periods of time to moderate levels may result in disorientation, irritability, short-term memory deficits, sleep disturbances, and difficulty in walking. These effects have been found in dry cleaners that use tetrachloroethylene.

Research in animals suggests that tetrachloroethylene could possibly cause cancer, but there is no evidence of this in humans.

How can exposure to tetrachloroethylene occur?

People can be exposed to environmental and occupational sources of tetrachloroethylene and also from consumer products.

Occupational exposure to tetrachloroethylene occurs primarily through inhalation and skin contact at workplaces where tetrachloroethylene is produced or used.



Public Health Fact Sheet

You might be exposed to tetrachloroethylene by inhaling contaminated air and eating contaminated food or drinking water.

Products that may contain tetrachloroethylene include water repellents, silicone lubricants, fabric finishers, spot removers, adhesives and wood cleaners.

Does tetrachloroethylene break down in the body or the environment?

Most of the chemical which enters the body is eliminated from the body by exhaling it in the breath.

Borewater

Tetrachloroethylene can be found in both surface and ground water usually due to past practices of discarding unwanted chemicals onto the ground, or leakage from landfill sites.

Who can I contact for my water to be tested?

SA Health recommends that you assume that groundwater is contaminated unless tests show that it is suitable for its intended use.

You are encouraged to have your water tested to ensure it is fit for the purpose you want to use it for, including: filling swimming pools, toilet flushing, watering the garden and vegetables, or drinking.

A number of commercial chemical testing laboratories are able to test groundwater and can supply sampling bottles and instructions for sampling.

SA Health recommends that all groundwater is tested for a range of contaminants prior to any use and at least yearly.

Who can I contact for more information?

If you have any health queries, please call the Public Health division of SA Health on 8226 7100.

Translation service

For information in languages other than English, call the Interpreting and Translating Centre and ask them to call the Department of Health.

This service is available at no cost to you; contact 8226 1990.

Contact

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