

Tetrachloroethylene (PCE) and Water

Tetrachloroethylene (also known as perchloroethylene, or PCE, or PERC) is a solvent used in industrial processes, metal cleaning, dry cleaning, and textile processing. In 2021, Minnesota passed a legislative ban on tetrachloroethylene for dry cleaning use. The ban takes effect in 2026 to give dry cleaners time to transition to the use of alternative solvents. Additionally, at the federal level, tetrachloroethylene is being phased out for consumer uses and various commercial uses by 2034.

The Minnesota Department of Health (MDH) Risk Assessment Unit evaluates health risks for contaminants in drinking water and develops health-based guidance values for groundwater. The toxicological summary for tetrachloroethylene can be found at the MDH Human Health-Based Water Guidance Table website.¹ MDH works in collaboration with the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Agriculture (MDA) to understand the occurrence and environmental effects of these contaminants.

Tetrachloroethylene in Minnesota waters

Tetrachloroethylene has been detected in several public water supplies in Minnesota. Since 2000, 3 percent of 352 detections were greater than 4 µg/L, with a maximum detected concentration of 19 µg/L. Tetrachloroethylene has also been detected in several groundwater monitoring wells in areas with known chemical contamination. One microgram per liter (µg/L) is the same as one part per billion (ppb).

MDH Guidance value

In 2014, MDH developed a guidance value of 4 µg/L (or ppb) for tetrachloroethylene in drinking water based on its potential to cause cancer.

MDH does not use health-based guidance values to regulate water quality, but they may be useful for situations where federal regulations do not exist. MDH develops guidance values to protect people who are most highly exposed and people who are most sensitive to the potentially harmful effects of a contaminant, including pregnant people, fetuses, infants, and children. A person drinking water at or below the guidance value would be at little or no risk for harmful health effects.

Potential health effects

The U.S. EPA has classified tetrachloroethylene as a likely human carcinogen by all routes of exposure.² Low level exposure to tetrachloroethylene over a person's lifetime may increase the risk of cancer. Higher exposures over a shorter amount of time can damage cells in the nervous system and impact visual memory, vision, and processing information. Breathing

tetrachlorethylene can cause headaches, vision problems, and problems with muscle coordination.¹ People with questions about their personal risk of health impacts from tetrachlorethylene exposure should consult with their physician.

Potential exposure to tetrachloroethylene

You can be exposed to tetrachloroethylene from using water repellents, degreasers, silicone lubricants, fabric finishers, spot removers, adhesives, or wood cleaners that contain tetrachloroethylene. Exposures to tetrachloroethylene are expected to decline with the phasing out of tetrachloroethylene for dry cleaning and other consumer and many commercial uses. Tetrachloroethylene may also move into indoor air via vapor intrusion from surrounding contaminated soil or groundwater.³

You can reduce your exposure to tetrachloroethylene by avoiding products that contain tetrachloroethylene; if you must use such products, follow the instructions carefully.

Tetrachloroethylene in the environment

While many uses of tetrachloroethylene are being phased out, tetrachloroethylene may still be released to the environment from spills or improper disposal at industrial sites or landfills. It moves easily into the air from contaminated water and soil.

References

1. Minnesota Department of Health (MDH). (September 2013). Human Health-Based Water Guidance Table. "Toxicological Summary for: tetrachloroethylene."
<https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/tetpercsumm.pdf>
2. Agency for Toxic Substances and Disease Registry (ATSDR). (June 2019). ToxFAQs for tetrachloroethylene. <https://www.atsdr.cdc.gov/toxfaqs/tfacts18.pdf>
3. Minnesota Department of Health (MDH). (June 2024). "Tetrachloroethylene (PCE) and Vapor Intrusion"
<https://www.health.state.mn.us/communities/environment/hazardous/docs/vapintruspce.pdf>

Minnesota Department of Health
Health Risk Assessment Unit
PO Box 64975, St. Paul MN 55164
651-201-4899
health.risk@state.mn.us
www.health.state.mn.us



Info Sheet Updated: January 2026
Guidance value developed: July 2014

To obtain this information in a different format, call: 651-201-4899.