



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

**Tetrachloroethene (PCE)**

Office of Land Quality – Science Services Branch

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[www.idem.IN.gov](http://www.idem.IN.gov)

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**Description:**

- Tetrachloroethene (PCE) is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing operations. It is also used as a starting material for making other chemicals and is used in some consumer products. In homes, it may be found in water repellants, silicone lubricants, spot removers, adhesives, and wood cleaners.
- Other names for tetrachloroethene include tetrachloroethylene, perchloroethylene, perc, perclene, and perchlor.
- PCE is a nonflammable liquid at room temperature. It evaporates easily into the air and has a sharp, sweet odor.

**Environmental Impacts:**

- Though it can easily evaporate, PCE can get into the soil or ground water, mostly as a result of spills and improper disposal. It may seep into soil and mix with ground water and contaminate well water that Indiana citizens use.
- PCE can vaporize from a ground water source and travel through soil pores, rock fissures, and along utility pipes to enter buildings. This is referred to as “vapor intrusion.”
- Depending on the oxygen level of the ground water, microorganisms can break down PCE into different chemicals such as trichloroethene (TCE) and vinyl chloride (VC).
- Ensuring that PCE is used and disposed of properly protects public health and the environment.

**Health Impacts:**

- PCE exposure may occur through:
  - Drinking water from a ground water source contaminated with PCE;
  - Breathing air containing PCE vapors; and
  - Skin contact if you handle PCE as a degreaser or spot remover.
- Health impacts depend upon how much, how long, how often and by what way you are exposed.
- Breathing high levels of PCE may cause irritation of the upper respiratory tract and eyes, dizziness, headache, sleepiness, confusion, nausea, and difficulty in speaking and walking.
- Breathing very high levels of PCE for long periods of time may cause nerve, kidney, and liver damage.
- Drinking high concentrations of PCE for a long time may cause liver and kidney damage, harm the immune system and hematologic system, and may cause adverse effects on development and reproduction.
- Skin contact for a short period of time may cause a rash and skin irritation; prolonged or repeated exposure can cause drying and cracking of the skin with rash, redness, and blisters.
- The United States Environmental Protection Agency (U. S. EPA) classifies PCE as “likely to be carcinogenic to humans” as there is evidence that there is a link between exposure and cancer.
- Young children, the elderly, and people with chronic health conditions may be more at risk when exposed to PCE.

**IDEM's Role:**

- The Indiana Department of Environmental Management (IDEM) is responsible for protecting human health and the environment while providing for safe industrial, agricultural, commercial, and governmental operations vital to a prosperous economy.

- IDEM's Office of Water Quality enforces the federal drinking water standard for PCE which is five parts per billion (5 ppb). IDEM suggests that citizens stop drinking water containing more than 5 ppb of PCE.
- IDEM's Office of Air Quality regulates the amount of PCE industries can release into outdoor air.
- IDEM's Office of Land Quality regulates the disposal and cleanup of PCE.

### **Citizen's Role:**

There are a number of actions every citizen can take to reduce their contribution or exposure to PCE:

- Follow the manufacturer's label instructions when you use and dispose of products containing PCE.
- When you bring clothes home from the dry cleaners, clothes may release small amounts of PCE into the air, so keep them in a well-ventilated area.
- If you use a private well for your home water supply, routinely test the water to make sure it is safe to drink.

### **Additional Information:**

- For more information on PCE and vapor intrusion please visit IDEM's websites at [www.idem.IN.gov/4141.htm](http://www.idem.IN.gov/4141.htm) and [www.idem.IN.gov/4337.htm](http://www.idem.IN.gov/4337.htm). Also see the Agency for Toxic Substances and Disease Registry (ATSDR) website at <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=48>
- Contact the Indiana State Department of Health, Office of Environmental Epidemiology, at (317) 351-7190, if you suspect you have been exposed to PCE.
- For questions and concerns about PCE contamination or environmental cleanup, contact IDEM's Office of Land Quality at (317) 232-3215 or (800) 451-6027, ext. 2-3215.
- To report an accidental release or spill, call IDEM's 24-Hour Spill line at (888) 233-7745.