



Tetrachloroethylene in Indoor Air (PERC, Perchloroethylene, PCE)

Fact Sheet for Contaminated Sites in California

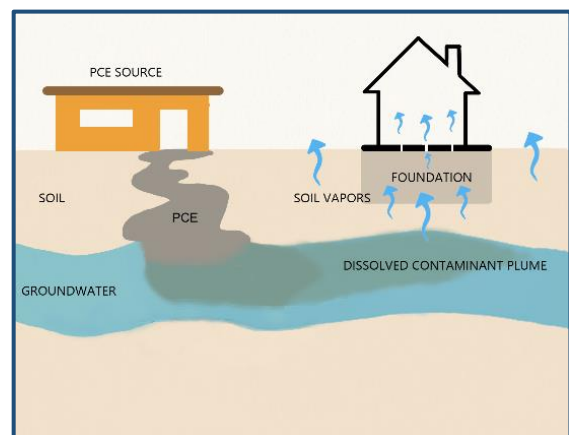
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What is Tetrachloroethylene?

- Tetrachloroethylene, also known as “PCE”, is a commercial solvent used in dry-cleaning fabrics, metal degreasing operations, and chemical production facilities.
 - California regulations require PCE be phased out from dry-cleaning machines and related equipment by January 1, 2023.¹
- PCE can break down into other harmful chemicals, such as trichloroethylene, *cis*-1,2-dichloroethylene, *trans*-1,2-dichloroethylene, and vinyl chloride.

How can I be exposed to PCE?

- If a building is near PCE contamination in soil or groundwater, PCE from below the ground may enter indoor spaces through vapor intrusion (see Figure). When this occurs, one might be exposed to PCE by inhaling indoor air. Information on contaminated properties undergoing investigation can be found on GeoTracker.²
- Other sources of PCE in the air include:
 - Emissions from facilities that use PCE.
 - Off-gassing of PCE from dry-cleaned fabrics or consumer products such as adhesives, spot/stain removers, and cleaners for automobile parts.
 - Vapors released during showering, if PCE is present in household water.



How might PCE affect my health?

Health effects depend on dose, duration and frequency of exposure, and individual sensitivity. At contaminated sites, there is typically a concern about health effects from long-term exposures, which can include:

- Changes in mood, memory, attention, reaction time, and vision.
- Harm to the nervous system, liver, kidneys, and reproductive system.
- An increased risk of cancer, such as bladder cancer or non-Hodgkin lymphoma, or multiple myeloma.

¹ Phase Out of PCE from the Dry-Cleaning Process. <https://ww2.arb.ca.gov/our-work/programs/phase-out-perchloroethylene-dry-cleaning-process>

² The Water Boards' GeoTracker has information on sites that require cleanup. <https://geotracker.waterboards.ca.gov/>

What can I do to reduce my exposure to PCE?

- Ventilate the home frequently by opening windows and doors.
- Keep PCE-containing products tightly covered to prevent evaporation into the air. Store products containing PCE in a shed or an outside location to reduce exposure and decrease the impact on indoor air.

Chlorinated Chemicals in Your Home (CARB, 2001) provides more information on reducing exposures to PCE and other chlorinated chemicals.

What are PCE Screening Levels?

- Screening levels (SLs) are health-protective, scientifically based concentrations developed by state regulators to assess risks to human health at contaminated sites.
- SLs are concentrations in air that should not pose harm to the population, including sensitive groups such as children, pregnant women, and those with health issues.
- Separate SLs are set to protect against (1) a significant risk of **cancer**; and (2) **non-cancer** adverse health effects.

PCE Screening Levels in Indoor Air ($\mu\text{g}/\text{m}^3$ = micrograms per cubic meter)

Screening Level	Residential ($\mu\text{g}/\text{m}^3$)	Commercial ($\mu\text{g}/\text{m}^3$)	Protects Against...
Cancer	0.46	2	A significant risk of cancer
Non-cancer	42	180	Other non-cancer adverse effects

- If contaminant concentrations are below SLs, then contamination from the site is unlikely to pose an unacceptable human health concern to humans.
- If contaminant concentrations are above SLs, then regulators may require additional sampling and investigation, implementation of cleanup strategies, or other actions to reduce human exposure to PCE contamination.

For more information

California Air Resources Board (CARB). [Chlorinated Chemicals in Your Home](#). May 2001.

California Department of Toxic Substances Control (DTSC). [Human Health Risk Assessment \(HHRA\) Note Number 3, DTSC-modified Screening Levels \(DTSC-SLs\)](#). June 2020.

Agency for Toxic Substances and Disease Registry (ATSDR). [Tetrachloroethylene – ToxFAQs](#). June 2019.

United States Environmental Protection Agency (USEPA). [Preliminary Information on Manufacturing, Processing, Distribution, Use and Disposal: Tetrachloroethylene \(Perchloroethylene\)](#). February 2017.

