Trichloroethylene (TCE) in Indoor Air

What is Trichloroethylene (TCE)?

- Trichloroethylene (TCE or trichloroethene) is a toxic, clear, colorless liquid. Liquid TCE evaporates quickly into the air. It is not flammable.
- TCE is primarily used in industry to remove grease from metal parts and to make refrigerants.
- TCE can also be found in consumer products such as automotive degreasers, stain removers, paint removers, and adhesives.

How can I be exposed to TCE?

Common ways people may be exposed to TCE include:

- Living or working in a building that is above soil or groundwater contaminated with TCE;
- Working in industries that produce or use TCE;
- Using TCE-containing products at home.

How can TCE affect my health?

- Short-term exposure to TCE in the first trimester of pregnancy may increase the risk of heart defects in the baby.
- Long-term exposure to TCE can impact the immune system, kidney, male reproductive system, and liver. Long-term exposures also increase the risk of kidney cancer and possibly other types of cancer.
- The health effects of TCE depend on many factors, such as:
  - The amount of TCE in air,
  - How long people breathe it, and
  - Individual sensitivity to the chemical.

What can I do to reduce my exposure to TCE in my home?

- Avoid using products containing TCE, and follow directions when using them.
- Ventilate your home frequently by opening the windows and doors.
- For more information reducing your exposure to chlorinated chemicals, such as TCE, see the Air Resources Board factsheet on *Chlorinated Chemicals in Your Home* (**https://www.arb.ca.gov/research/indoor/clguide.pdf**).

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What do the TCE screening levels mean?

The TCE screening levels are used to guide actions that may be needed to protect health. The screening levels are indoor air concentrations of TCE that should not pose harm even to sensitive people, including children, pregnant women, and those who have health issues. The non-cancer screening level is set below levels thought to cause adverse "non-cancer" effects, including those cited on the previous page. If someone is exposed to concentrations above, but near these values, health effects are not expected to occur, because of the protective factors included in the calculations. The cancer screening level is set at a concentration that is not expected to pose a significant cancer risk from long-term exposure.

Screening Levels for Trichloroethylene in Indoor Air[1]

Residential (µg/m³)	**Commercial** (µg/m³)	**Description**
0.48	3.0	Protects against cancer
2.1	8.8	Protects from health effects other than cancer

µg/m³ = micrograms per cubic meter

What do the TCE action levels mean?

The TCE action levels signal when steps should be taken to quickly reduce TCE exposure because of the possible short-term effects to unborn children. TCE levels at or above the "accelerated action levels" tell regulators that actions should be taken within a few weeks to reduce TCE levels. TCE levels at or above the "urgent action levels" tell regulators that actions should be taken within a few days to reduce TCE levels. Possible ways to quickly reduce TCE levels in indoor air include increasing the ventilation or using an air purifier with an activated charcoal filter.

Action Levels for Trichloroethylene in Indoor Air[2]

Residential (µg/m³)	**Commercial** (µg/m³) (8 hr work day)	**Commercial** (µg/m³) (10 hr work day)	**Action if Exceeded**
2	8	7	Accelerated: take action within a few weeks to reduce TCE levels in air
6	24	21	Urgent: take action within a few days to reduce TCE levels in air

µg/m³ = micrograms per cubic meter

[1] US Environmental Protection Agency. 2018. Regional Screening Levels for Chemical Contaminants at Superfund Sites. May 2018. **https://www.epa.gov/risk/regional screening levels rsls**

[2] US Environmental Protection Agency. 2014. Memorandum: EPA Region 9 Interim Action Levels and Response Recommendations to Address Potential Developmental Hazards Arising from Inhalation Exposures to TCE in Indoor Air from Subsurface Vapor Intrusion. June 30.