

TCE & Health Fact sheet



IOWA

College of Public Health

Introduction

Trichloroethylene (TCE) is a volatile chemical created by chemical synthesis (1, 2). It is colorless, nonflammable, and produces a somewhat sweet odor (1). When ingested, the chemical has a sweet, burning taste (3). TCE is used in adhesives, lubricants, paints, varnishes, pesticides, cleaning wipes, carpet cleaners, and other products, but mainly as a degreasing solvent for metal equipment, and as a refrigerant (2, 3). TCE breaks down slowly and persists in the environment for long periods of time (2).

Exposure Sources

People can be exposed to TCE in a variety of ways. Workers who manufacture and repair aircraft and automobiles, cut screws, or are involved in degreasing are exposed to high concentrations of the chemical (3, 4). TCE has been detected in outdoor and indoor air, water, soil, food, and animal tissues (4). Exposure from environmental sources, like hazardous waste sites and contaminated water, is common in the US (4). When spilled or improperly stored, TCE can pass through soil and accumulate in groundwater, making drinking water an important exposure source (2, 3). In 2023, 101 of the 103 Iowa public water systems contained no detectable TCE. The two remaining public water systems contained concentrations below the maximum contaminant level (5). People can also be exposed to TCE when vapor intrusion occurs at Superfund sites. This is the process by which harmful vapors seep into homes near the foundation through cracks, and pipes. Iowa hosts two TCE superfund site in the southwest of downtown Des Moines and the Lot 46 Valley Gardens TCE site (6).

Health Risks Associated with TCE

Cancer Health Risks	The International Agency for Research on Cancer (IARC) considers TCE a known human carcinogen. Exposure to TCE increases the risk of kidney cancer and is also linked to liver cancer and non-Hodgkin lymphoma (4). There is insufficient evidence to support an association between TCE and other cancers (4).
Non-Cancer Health Risks	TCE causes damage to the central nervous system, liver, kidneys, immune system, and reproductive organs (1). The chemical also causes fetal heart defects (1). Acute exposure to high concentrations can cause a dizziness or sleeping and can lead to unconsciousness and death if the exposure is very high. Chronic exposure to small amounts of TCE may cause headaches, dizziness, difficulty concentrating, and lung irritation, in addition to cancer and organ damage (1, 3).

How is TCE regulated?

- The maximum contaminant level (MCL) for drinking water for TCE is 0.005 mg/L (7).
- The manufacturing, processing, and distribution of TCE for consumer uses was prohibited in 2025; however, the final ruling allows exemptions that extend up to several decades (1).
- In locations where phase-out will take longer, the Workplace Chemical Protection Program reduces exposure through enforceable safety measures (1).
- Products cannot contain greater than 0.1% TCE by weight (1).
- TCE is listed as a hazardous substance under CERCLA authorizing its clean-up at contaminated sites.

What can you do?

- If you work with or near TCE, wear proper protective equipment to minimize exposure (2).
- Avoid drinking water contaminated with TCE (2).
- Do not allow children to play in areas where TCE has been detected in the soil, for example, in and around Superfund sites (2, 8).
- Follow instructions on product labels to reduce your exposure to TCE and other toxic chemicals (2).
- To learn more about potential exposures in your area, visit the environmental working groups page [here](#) to discover drinking water exceedances and the EPA [here](#) to find Superfund sites near you.

Published September 2025
Questions? Visit our website [EHSRC.org](https://ehsrc.org)

References



IOWA

College of Public Health

1. United States Environmental Protection Agency (2024). Fact sheet: 2024 final risk management rule for trichloroethylene under TSCA. <https://www.epa.gov/system/files/documents/2024-12/tce-fact-sheet.pdf>
2. National Cancer Institute (2024). Trichloroethylene (TCE). <https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/trichloroethylene>
3. Iowa Health and Human Services (2025). Trichloroethylene. <https://hhs.iowa.gov/environmental-health/toxicology/toxicology-manual/t#:~:text=Source%20of%20Exposure%20in%20Iowa,-Most%20of%20the&text=People%20are%20exposed%20to%20trichloroethylene,leaky%20storage%20containers%20or%20piping>.
4. IARC Working Group on the Evaluation of Carcinogenic Risks to Humans (2014). Trichloroethylene, tetrachloroethylene, and some other chlorinated agents. IARC monographs on the identification of carcinogenic hazards to humans, 106.
5. Iowa Health and Human Services (2023). Statewide average trichloroethylene (TCE) concentration 2023. https://data.idph.state.ia.us/t/IDPH-DataViz/views/PublicWaterTCE/AnnualAverage?iframeSizedToWindow=true&%3Aembed=y&%3AshowAppBanner=false&%3Adisplay_count=no&%3AshowVizHome=no&%3Arender=false
6. Environmental Protection Agency (2025). Superfund sites in reuse in Iowa. <https://www.epa.gov/superfund-redevelopment/superfund-sites-reuse-iowa>
7. United States Environmental Protection Agency (2024). National primary drinking water regulations. <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>
8. Des Moines Water Works (2024). Fact sheet: trichloroethylene (TCE). https://www.dmww.com/news_detail_T37_R371.php