



# Trichloroethylene (TCE)

2016

Exposure to Trichloroethylene (TCE) has the potential to harm your health. The health effects of contact with any hazardous substance depend on how much, for how long and the way you are exposed. The effects also depend on personal factors such as your overall health, family history and lifestyle.

## What is TCE?

Trichloroethylene (TCE) is a volatile, nonflammable, colorless liquid with a somewhat sweet odor and a sweet, burning taste.

## Where is TCE found?

It is used mainly as a solvent to remove grease from metal parts, but it is also an ingredient in glue, paint removers, typewriter correction fluids, stain removers and gun cleaners. It has been used to clean electronic components.

## How could I be exposed to TCE?

- Breathing, drinking or through skin contact.
- Contact with contaminated soil.
- Drinking from a contaminated well or water source.
- If your water source is contaminated with TCE, activities such as showering, doing dishes or running a dish washer or a washing machine can cause TCE in the water to evaporate and contaminate your indoor air.
- It can get into indoor air through the use of products that contain TCE in the home or by vapor intrusion. Vapor intrusion occurs when TCE in the groundwater or soil evaporates and gets into a building where people can breath it.

## What guidelines have been set to protect human health?

The U.S. Environmental Protection Agency (EPA) has established health guidelines for TCE in the air of 2.0 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). The maximum contaminant level for TCE in public drinking water systems is 0.005 milligrams per liter (0.005 mg/L) or 5 parts of TCE per billion parts of water (5 ppb).

## How can TCE affect my health?

Exposure in workplace settings showed that breathing small amounts for short periods may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Drinking or breathing small amounts of TCE for longer periods may cause damage to the kidneys, heart, reproductive system, or immune system, and impaired fetal development in pregnant women.

Drinking or breathing larger amounts of TCE for long periods may cause damage to the nervous system, liver, or changes in mood or sleep patterns. Skin contact with TCE for short periods may cause skin rashes.

TCE is classified as a human carcinogen by the EPA. Studies have shown a strong association of TCE with kidney cancer. Studies suggest that TCE may be associated with liver cancer and non-Hodgkin's lymphoma. It may also be associated with childhood leukemia, bladder, esophageal, prostate, cervical, and breast cancers, although the evidence is weaker.

## How can I limit my exposure to TCE?

- Remove household sources of TCE.
- If your private well water is contaminated use an alternative source of water or a whole-house carbon filter and keep up with the filter maintenance.
- If you are concerned about TCE vapor intrusion, contact an environmental professional to assist in the initial evaluation, design, and installation of a control system.

## When should I see a doctor?

See a physician if you or your children have symptoms that you think are caused by TCE exposure. You should tell the physician about the symptoms and about when, how and for how long you think you and/or your children were exposed to TCE.

## Well Testing

Contact your local health department to have your well water tested.

## Additional information

NC Department of Health and Human Services, Division of Public Health, Health Assessment, Consultation and Education program at (919) 707-5900 for additional information.

## References

U.S. Environmental Protection Agency. Toxicological Review of Trichloroethylene (CAS No. 79-01-6) in Support of Summary Information on the Integrated Risk Information System (IRIS). September 2011. Available at <http://www.epa.gov/iris/supdocs/0199index.html>

U.S. Environmental Protection Agency. Trichloroethylene. Technology Transfer Network, Air Toxics Web Site. Accessed on November 20, 2012 from <http://www.epa.gov/atw/hlthef/tri-ethy.html#ref4>

Agency for Toxic Substances and Disease Registry (ATSDR). ToxFAQs for Trichloroethylene (TCE). Accessed on November 13, 2012 from <http://www.atsdr.cdc.gov/tfacts19.html>



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