# What You Need To Know About Trichloroethylene (TCE)

## What is TCE?

Trichloroethylene is a solvent used industrially and commercially. It is a volatile organic compound, which means it can turn into a vapor or gas. TCE is a colorless liquid that has a sweet chloroform-like odor.

## What is TCE Used for?

TCE is used primarily as a solvent for cleaning and degreasing metal parts. It is also used to make other chemicals, especially refrigerants.

In addition to these primary uses, TCE also has many other uses such as:

- Textile processing agent
- Stain remover in dry cleaning
- Paint remover / stripper
- Protective coating on artwork
- Rug cleaner / spot remover
- Typewriter correction fluid
- Adhesives
- Lubricants
- Varnishes
- Extraction solvent for greases, oils, waxes and tars
- Pesticides
- Hydrofluorocarbon production
- Flame retardant chemicals

## How Might I be Exposed to TCE?

Due to its extensive use, TCE has polluted the atmosphere, groundwater and soil. It has been found in over 1000 of the 1699 Superfund Sites identified by the EPA. Most of the TCE in the United States is used in industrial degreasing operations. If you live near this type of facility or near a hazardous waste site containing TCE, you may be exposed through drinking contaminated water if you have a private well that pulls from contaminated groundwater. Inhaling TCE vapors while bathing or showering with contaminated groundwater is another way to get exposed to TCE. You may also be exposed by coming into contact with

contaminated soil or by breathing air in your home that has been contaminated by toxic vapors coming from the contaminated groundwater and entering your home through tiny cracks in the foundation. This is called vapor intrusion. If you work in an industry where TCE is used or manufactured, you may be exposed to TCE by breathing contaminated air or by contact with your skin.

**What Happens to Trichloroethylene in the Environment?**

Trichloroethylene evaporates quickly when it is exposed to the air. However, TCE breaks down very slowly in soil and water, and can remain in groundwater for a long time because it cannot easily evaporate. Over time, the TCE in groundwater can vaporize, or turn into a gas, and rise up through the soil and into the air or the buildings above.

**How Can TCE Affect My Health?**

TCE has been classified as a human carcinogen by the United States Environmental Protection Agency (US EPA), the National Toxicology Program and the International Agency for Research on Cancer (IARC), a division of the World Health Organization. There is ***no safe level of TCE.***

Studies have linked TCE exposure to an increased risk of cancers in humans. More specifically, there is evidence linking TCE exposure to the following cancers:

- Kidney cancer
- Liver cancer
- Malignant lymphoma
- Leukemia
- Non-Hodgkin lymphoma
- Rectal cancer
- Breast cancer
- Lung cancer
- Cervical cancer
- Esophageal cancer
- Ovarian cancer
- Prostate cancer
- Bladder cancer

The main targets of TCE toxicity include the central nervous system, the immune system, the kidneys, liver and male reproductive system. There is also evidence linking TCE exposure to the following health problems:

- Parkinson's disease
- Scleroderma
- Hodgkin's disease
- Impaired immune system function
- End-stage renal disease

TCE exposure is especially dangerous for pregnant women, as it targets the developing fetus. There are numerous reported health problems in children exposed to TCE in utero such as:

- Low birth weight
- Fetal death
- Major heart defects
- Neural tube defects
- Oral cleft defects
- Eye defects
- Major malformations
- Chonal atresia ( Nasal passages blocked with tissue or bone)

Symptoms of TCE exposure can include:

- Skin Irritation
- Bronchial Irritation
- Headache
- Dizziness
- Lack of Coordination
- Facial Numbness
- Euphoria
- Blurred Vision
- Abdominal Pain
- Decreased Appetite
- Sleep Disturbances
- Memory Loss
- Confusion

- Coma
- Sleepiness
- Respiratory Depression
- Hypotension
- Nausea and Vomiting
- Diarrhea
- Liver Necrosis
- Death

**Is there a Medical Test That Shows Whether I Have Been Exposed to TCE?**

TCE and its breakdown products can be measured in blood or urine. However, because TCE and the breakdown products leave the body quickly, tests for TCE need to be done within days of exposure.

**How Can I Reduce my Family's Risk of Exposure to TCE?**

1. Get your private well tested.
2. Avoid drinking water from contaminated sources. Drink bottled water until a solution is reached. Limit showers and baths or use bottled water.
3. Demand the polluter connect your family to a clean water source.
4. Prevent children from playing in the dirt if you live near a site contaminated with TCE.
5. Test the air inside your home.
6. Seal sump pumps and foundation cracks and increase ventilation in your home.
7. Demand the polluter install a vapor mitigation system to get rid of the toxic vapors, if necessary.
8. Demand that the polluter clean up the contaminated groundwater.
9. Most importantly demand that the polluter clean up the contamination on their property.
10. Contact an experience environmental lawyer to help you with each of these steps.

**What Should I Do if I'm Concerned My Health May be Affected?**

See your family doctor or an occupational doctor familiar with chemical exposure. Let them know if you have been exposed to TCE and bring any TCE test results.

**TCE Can Also be Labeled As**:

1,1,2-Trichloroethene, 1,1-Dichloro-2-Chloroethylene, 1-Chloro-2,2-Dichloroethylene, Acetylene Trichloride, Trethylene, Triclene, Tri, Trimar, Trilene, HCC-1120; trichloroethene; Algylen; Anamenth; Chlorilen; Chlorylen; Chorylen; Densinfluat; Ethinyl trichloride; Ethylene trichloride; Fluate; Gemalgene; Germalgene; Narcogen; Narkogen; Narkosoid; Threthylen; Threthylene; Trethylene; Tri; Tri-Clene; Trichloran; Trichloren; Trichloroethene; Trielene; Trilen; Trilene; Trimar; Westrosol; 1,1,2-Trichloroethene; C2HCl3; Acetylene trichloride; 1-Chloro-2,2-dichloroethylene; 1,1-Dichloro-2-chloroethylene; 1,1,2-Trichloroethylene; Benzinol; Blacosolv; Blancosolv; Cecolene; Chlorylea; Circosolv; Crawhaspol; Dow-tri; Dukeron; Fleck-flip; Flock FLIP; Lanadin; Lethurin; NCI-C04546; Nialk; Perm-A-chlor; Perm-A-clor; Petzinol; Philex; RCRA Waste number U228; TCE; Triad; Trial; Triasol; Trichlooretheen; Trichloorethyleen, tri; Trichloraethen; Trichloraethylen, tri; Trichlorethene; Trichlorethylene, tri; 1,2,2-Trichloroethylene; Tricloretene; Tricloroetilene; Trielin; Trielina; Trieline; Triklone; Triline; Triol; Tri-plus; Tri-plus M; UN 1710; Vestrol; Vitran; Distillex DS2; Ethene, 1,1,2-trichloro-; R 1120; Triklone N

**Links:**

https://www.atsdr.cdc.gov/mmg/mmg.asp?id=168&tid=30

https://www.atsdr.cdc.gov/toxguides/toxguide-19.pdf

https://www.atsdr.cdc.gov/phs/phs.asp?id=171&tid=30

https://www.atsdr.cdc.gov/toxfaqs/tfacts19.pdf

https://www.epa.gov/sites/production/files/2016-09/documents/trichloroethylene.pdf

http://webbook.nist.gov/cgi/cbook.cgi?Name=trichloroethylene&Units=SI

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