

Trichloroethylene (TCE)

What is TCE?

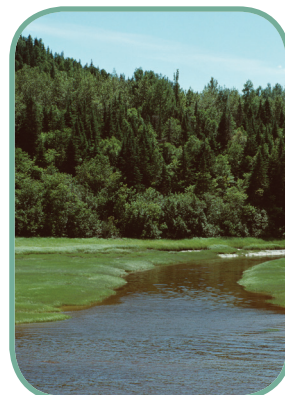
Trichloroethylene (TCE) is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet, burning taste. It's mainly used to remove grease from metal parts. But it's also a part of adhesives, paint removers, and spot removers.

TCE doesn't occur naturally in the environment. It is found in soil and underground water sources when it is manufactured, used, and disposed of improperly. When TCE evaporates from contaminated soil or groundwater, its vapors sometimes move up through the soil and can get into air inside buildings.



How might I be exposed to TCE?

- Drinking, swimming, or showering in water that is contaminated with TCE.
- Direct contact with soil contaminated with TCE (such as near a hazardous waste site) and unintentionally swallowing the soil.
- Breathing air inside homes or other buildings that have been contaminated by TCE as it evaporates from the soil or groundwater underneath the building.



How can I reduce exposure to TCE in my home?

Use Products carefully:

- Make sure rooms are well ventilated with a fan or an open window
- Store household products in a safe place
- Keep household products in the boxes or bottles in which you bought them
- Don't mix one household product with another
- Follow the directions on the boxes or bottles

How is TCE noticed in indoor air?

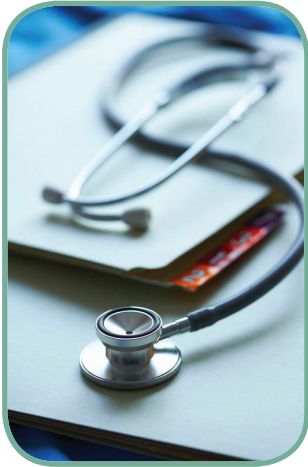
If TCE is in your indoor air you most likely would not be able to smell it. If you think TCE is in your indoor air, you can have that air tested by a professional with air sampling equipment. This test is expensive and may have to be done more than one time.

How can TCE affect my health?

What happens to you when you contact any chemical depends on

- The dose—that is, how much of the chemical gets into your body
- The duration—how long and how often you're exposed to it
- The route—how you're exposed to the chemical (such as breathing air or drinking water that contains TCE)

How a chemical will affect someone is hard to determine. Especially without knowing exactly how much that person was exposed to and for how long and how often. Certain groups of people—such as children, the elderly and particularly unborn babies—may be more vulnerable than other groups to health effects from TCE exposure.



Some facts about TCE exposure:

- The U.S. Environmental Protection Agency and the National Toxicology Program say TCE can cause cancer. Worker exposure to TCE has been associated with liver cancer, non-Hodgkin's lymphoma, and kidney cancer.
- Human and animal studies show that exposure to low levels of TCE may cause heart-related health effects to unborn babies and effects to the immune system.
- Human studies show that people exposed to very high levels of TCE may have headaches, lung irritation, dizziness, poor coordination, and difficulty paying attention.
- Breathing high amounts of TCE (such as what people could be exposed to if they using TCE at work) could cause improper heart function, unconsciousness, and death.

Can any medical test detect TCE exposure?

If you have been exposed to TCE recently, it can be detected in your breath, blood, or urine. For small amounts of TCE, breath testing must occur within an hour or two after exposure. For large amounts of TCE, blood and urine tests can find TCE and its byproducts up to a week after exposure. Because exposure to other chemicals can produce similar byproducts in the body, test results do not absolutely prove exposure to TCE. Only a doctor or other medical professional familiar with these tests should give them.

Can I be treated for TCE exposure?

No medical treatment can remove TCE from your body, but your body does remove TCE on its own. You breathe out TCE. It also leaves your body in your urine. Avoiding TCE exposure is always recommended.

Where can I get more information?

- If you have concerns about your health, call or see your doctor.
- If you would like more information on TCE, call the Centers for Disease Control and Prevention Information Line. The toll-free phone number is **1-800-232-4636**. Let the operator know that you would like to speak to someone about TCE or trichloroethylene.
- If you would like more information on the Agency for Toxic Substances and Disease Registry, visit our Web site at www.atsdr.cdc.gov. You will find telephone numbers to contact an ATSDR regional staff member in your state.

References:

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2. Johnson P, Goldberg S, Mays M, Dawson B. 2003. Threshold of trichloroethylene contamination in maternal drinking waters affecting fetal heart development in the rat. *Environ Health Perspect*, 111, 289-292.
3. Keil DE, Peden-Adams M M, Wallace S, Ruiz P, Gilkeson G S, 2009. Assessment of trichloroethylene (TCE) exposure in murine strains genetically-prone and non-prone to develop autoimmune disease. *J Environ Sci Health A Tox Hazard Subst Environ Eng*, 44, 443-453.
4. The Agency for Toxic Substances and Disease Registry. Fact Sheet: How to Reduce Your Exposure to Chemicals at Home, Work, and Play. Atlanta, GA: US Department of Health and Human Services; 2011.
5. The Agency for Toxic Substances and Disease Registry. Toxicological Profiles: Trichloroethylene (TCE). CAS# 000079-01-6. Atlanta, GA, US Department of Health and Human Services; 2010 September.