



Chemicals in Private Drinking Water Wells Fact Sheet

Florida Department of Health, Division of Environmental Health

This fact sheet discusses possible health risk from exposure to low levels of trichloroethene typically found in private drinking water wells.

Trichloroethene (TCE)

What is trichloroethene (TCE)?

Trichloroethene is a synthetic, colorless liquid. It has a somewhat sweet odor and a sweet, burning taste. Trichloroethene is also known as trichloroethylene or TCE.

It is mainly used to remove grease from metal parts. It is also used in making paint and spot removers. It has been found in groundwater and surface water because of its production, use, and disposal.

How might I be exposed to trichloroethene in my drinking water?

- Drinking contaminated well water
- Living near uncontrolled hazardous waste sites containing trichloroethene products
- Breathing air in the home, which has been contaminated by trichloroethene vapors from use of hot water (showers, dishwashers, etc.)

What is the standard for trichloroethene in drinking water?

The Florida Department of Environmental Protection's (DEP) drinking water standard for trichloroethene is 3 micrograms per liter of water (3 ug/L). There is no required sampling of private drinking water wells.

How can trichloroethene affect my health?

To protect health, drinking water standards are set at very low levels. Drinking water every day at or below the drinking water standard for your entire lifetime is unlikely to cause illness.

To set drinking water standards, scientists study reports of people exposed to chemicals at work. They also study reports of experiments with animals. From these reports, they determine a "no-effect level" or level that does not cause illness. Then, to be on the safe side, scientists typically set drinking water standards hundreds or thousands of times less than the "no-effect level." Therefore, drinking water with levels slightly above the standard for a short time period does not significantly increase the risk of illness. The risk of illness, however, increases as the level of trichloroethene increases and the length of time you drink the water increases.

The type and severity of health effects associated with exposure to a particular chemical depends on a number of factors:

- How much of the chemical was someone exposed to each time?
- How long did the exposure last?
- How often did the exposure occur?
- What was the route of exposure? (Did someone eat, drink or breathe the chemical into their body?)

Health effects are also determined by a number of personal factors. From person to person, how someone is affected by a chemical exposure ranges widely. The drinking water standard is set to protect the most sensitive individuals. Health effects are also determined by a number of personal factors. These include:

- How old are they?
- What gender are they?
- Is the person generally healthy or do they already have other health problems?
- What are their health habits? (For instance, do they drink alcohol or smoke tobacco?)
- How likely are they to be affected by exposure to a chemical, in general?

Drinking water with concentrations of trichloroethene well above the drinking water standard for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women. The extent of some of these effects, however, is not clear. Breathing trichloroethene from the household use of water with concentrations well above the drinking water standard may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating.

How likely is trichloroethene to cause cancer?

It is unknown if trichloroethene causes cancer in humans. The National Toxicology Program has determined that trichloroethene is anticipated to cause cancer in humans. Some studies on animals suggested that high levels of it caused liver, kidney or lung cancer. The drinking water standard is set to protect against the risk of cancer.

Is there a medical test to see if I have been exposed to trichloroethene?

Several tests can show if you have been exposed to trichloroethene. There is a test for measuring it in the breath; this test must be done shortly after exposure. Blood and urine tests can detect trichloroethene and its breakdown products for up to one week after exposure. However, exposure to similar chemicals can produce the same breakdown products, so the detection is not absolute proof of exposure to trichloroethene.

Should I continue to use my drinking water if trichloroethene is found?

Levels of trichloroethene less than the drinking water standard of 3 ug/L are not likely to cause illness. Drinking water with levels slightly above the drinking water standard for a short time period does not significantly increase the risk of illness. However, because the risk of illness increases with how much of a chemical a person is exposed to, how often an exposure occurs and how long the exposure lasts, you should seek drinking water that meets the standard.

Who can you contact for more health information?

Please call the Florida Department of Health toll-free help line 877-798-2772 weekdays from 10:00 a.m. to 7:00 pm. Outside of Florida, please call 850-245-4299 between 8:00 a.m. and 5:00 p.m. Or visit us online at: www.myfloridaeh.com

For more information about the health effects from exposure to this chemical in different situations and at higher levels than those usually found in drinking water wells, please see the ATSDR ToxFAQs for trichloroethene at: www.atsdr.cdc.gov/tfacts19.pdf