FLORIDA DEPARTMENT OF HEALTH

DIVISION OF Environmental Health

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 tetrachloroethene typically found in private drinking water wells.

Tetrachloroethene

What is tetrachloroethene?

Tetrachloroethene is a synthetic, nonflammable liquid. It evaporates easily into the air and has a sharp, sweet odor. Tetrachloroethene is also know as tetrachloroethylene and perchloroethylene or PCE.

Tetrachloroethene is used in dry cleaning fabrics. It is also used to clean grease from metals. It can also be used to make other chemicals or consumer products.

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

- Drinking contaminated well water
- Living near uncontrolled hazardous waste sites containing tetrachloroethene products

What is the standard for tetrachloroethene in drinking water?

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

How can tetrachloroethene affect my health?

To protect health, drinking water standards are set at very low levels. Drinking water every day at or below the 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 tetrachloroethene 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?

The health effects of drinking water or breathing air with low levels of tetrachloroethene are not well known.

How likely is tetrachloroethene to cause cancer?

It is unknown if tetrachloroethene causes cancer in humans. The US Department of Health and Human Services has determined that tetrachloroethene may reasonably be anticipated to be a carcinogen. Tetrachloroethene has been shown to cause liver tumors in mice and kidney tumors in male rats. 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 tetrachloroethene?

There is a test to measure levels of tetrachloroethene in exhaled air. It is stored in body fat and is slowly released by breathing, so it can be detected for weeks after an exposure to high levels. There is also a blood test for it and trichloroacetic acid, a breakdown product of tetrachloroethene. These tests are simple to perform. These tests are not available in most doctors' offices, but can be performed at special laboratories that have the right equipment.

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

Levels of tetrachloroethene 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 tetrachloroethene at: www.atsdr.cdc.gov/tfacts18.pdf