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 1,1-dichloroethene typically found in private drinking water wells.

Xylenes

What are xylenes?

Xylenes are a group of three closely related chemicals. Xylenes are a colorless, sweet-smelling, flammable liquid. Xylenes occur naturally in petroleum and coal tar and are formed during forest fires.

Chemical industries produce xylenes from petroleum. It's one of the top 30 chemicals produced in terms of volume. Xylenes are used as a cleaning agent, thinner for paint and in paints and varnishes.

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

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

What is the standard for xylenes in drinking water?

The Florida Department of Environmental Protection's (DEP) drinking water standard for xylenes in drinking water is 10,000 micrograms per liter of water (10,000 ug/L). Concentrations above 20 ug/L, can give water a bad taste or smell. There is no required sampling of private drinking water wells.

How can xylenes 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 <u>less</u> 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 xylene 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 levels of xylenes well above the drinking water standard for extended periods increases the risk of damage the nervous system, liver, and kidneys.

How likely are xylenes to cause cancer?

The ability of xylenes to cause cancer in humans is unknown. The International Agency for Research on Cancer has determined that xylenes are not classifiable as to its ability to cause cancer in humans.

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

Laboratory tests can detect xylenes or its breakdown products in exhaled air, blood, or urine. There is a high degree of agreement between the levels of exposure to xylenes and the levels of xylenes breakdown products in the urine. However, a urine sample must be provided very soon after exposure ends because xylenes quickly leaves the body. These tests are not routinely available at your doctor's office.

Should I continue to use my drinking water if xylenes are found?

Levels of xylenes less than the drinking water standard of 10,000 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 xylenes at: www.atsdr.cdc.gov/tfacts71.pdf