



## 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 toluene typically found in private drinking water wells.*

# Toluene

### What is toluene?

Toluene is a clear, colorless liquid with a distinctive smell. It occurs naturally in crude oil and in the Tolu tree. Making gasoline and other fuels from crude oil produces toluene. So does making coke from coal.

Manufacturers use toluene to make paints, paint thinners, fingernail polish, lacquers, adhesives and rubber. Some printing and leather tanning processes also require toluene.

### How might I be exposed to toluene in my drinking water?

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

### What is the standard for toluene in drinking water?

The Florida Department of Environmental Protection's (DEP) drinking water standard for toluene is 1,000 microgram per liter (1,000 ug/L). Concentrations above 40 ug/L, can give water a bad taste or smell. There is no required sampling of private drinking water wells.

### How can toluene 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 drinking water standard for a short time period does not significantly increase the risk of illness. The risk of illness, however, increases as the level of chemical 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?

At levels well above the drinking water standard, toluene may affect the nervous system causing tiredness, confusion, weakness, drunken-type actions, memory loss, nausea, loss of appetite, hearing loss, and color vision loss. These symptoms usually disappear when exposure is stopped.

**How likely is toluene to cause cancer?**

Studies in humans and animals generally indicate that toluene does not cause cancer.

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

There are tests to measure the level of toluene or its breakdown products in exhaled air, urine, and blood. To determine if you have been exposed to it, your urine or blood must be checked within 12 hours of exposure. Several other chemicals are also changed into the same breakdown products as it, so some of these tests are not specific for toluene.

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

Levels of toluene less than the drinking water standard of 1,000 ug/L are not likely to cause illness. Drinking water with levels slightly above the 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](http://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 toluene at: [www.atsdr.cdc.gov/tfacts56.pdf](http://www.atsdr.cdc.gov/tfacts56.pdf)