



Chemicals in Private Drinking Water Wells Fact Sheet Florida Department of Health, Bureau of Environmental Health

This fact sheet discusses possible health risks from exposure to low levels of ethylene dibromide (EDB) typically found in drinking water wells.

Ethylene dibromide (EDB)

What is ethylene dibromide?

Ethylene dibromide (EDB) is a colorless, heavy organic liquid with a mildly sweet chloroform-like odor. It is also known as 1,2-dibromoethane. Trade names include Bromofume and Dowfume.

Farmers used it to kill nematodes (worms) in soil around citrus, peanuts, and cotton plants. Anti-knock gasoline mixtures used it, particularly in aviation fuel. Other uses were as a solvent for resins, gums, and waxes; in waterproofing products; and in making dyes and drugs.

How might exposure to EDB in drinking water occur?

- Drinking contaminated well water
- Breathing vapors from contaminated water
- Bathing with contaminated water

What is the standard for EDB in drinking water?

The Florida Department of Environmental Protection's drinking water standard for EDB is 0.02 micrograms per liter (0.02 ug/L). There is no required sampling of private drinking water wells.

How can EDB affect my 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 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 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 (eating, drinking, or breathing)?

How chemical exposures may affect someone can range widely from one person to the next. A number of personal factors also determine health effects. 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 chemical exposures to effect someone, in general?

Finding EDB in private drinking water wells remains rare, but when it happens, it is mostly only at low levels. Drinking water with levels of EDB well above the drinking water standard for an extend period may increase the risk of birth defects.

How likely is EDB to cause cancer?

The ability of EDB to cause cancer in humans is unknown. In rats and mice, EDB causes skin, lung, nose, stomach and liver cancer. The International Agency for Research on Cancer has determined they do not have enough proof to say that EDB causes cancer in humans but they do have enough to say it causes cancer in animals. The U.S. Environmental Protection Agency has determined EDB as a probable human carcinogen. The drinking water standard is set to protect against the risk of cancer.

Is there a medical test for EDB exposures?

If you suspect EDB exposures have affected you, your doctor can do a medical exam to test liver, kidney, nerve and reproductive system functions. These tests indicate whether damage has occurred but may not tell what caused the damage.

Is it safe to keep drinking water with EDB in it?

Levels of EDB less than the drinking water standard of 0.02 ug/L are not likely to cause illness. Drinking water with levels slightly above the standard for a short time does not significantly increase the risk of illness. However, because health risks increase as the levels of a chemical (or how long a person drinks it) increases, it is best to drink water that meets standards.

For additional health information, please call the Florida Department of Health at 850-245-4240 or visit us online at www.floridahealth.gov/environmental-health/drinking-water/Chemicals-HALs.html

For more information about the health effects from exposure to EDB in different situations and at higher levels than those usually found in drinking water wells, please see the ATSDR ToxFAQs for EDB at www.atsdr.cdc.gov/toxfaqs/tfacts37.pdf