



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 1,2-dibromoethane (EDB) typically found in private drinking water wells.

1,2-Dibromoethane (EDB)

What is 1,2-dibromoethane?

1,2-dibromoethane is a colorless synthetic liquid with a mildly sweet chloroform-like odor. It is also known as ethylene dibromide or EDB. Trade names include Bromofume and Dowfume.

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

How might I be exposed to 1,2-dibromoethane in my drinking water?

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

What is the standard for 1,2-dibromoethane in drinking water?

The Florida Department of Environmental Protection's (DEP) 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 1,2-dibromoethane 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 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?

EDB is rarely in private drinking water wells and then usually only at very low levels. Drinking water with levels of EDB well above the drinking water standard for an extended period may increase the risk of birth defects.

How likely is 1,2-dibromoethane 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 cancers. The International Agency for Research on Cancer has determined there is inadequate evidence that EDB causes cancer in humans but sufficient evidence that it causes cancer in animals. The US Environmental Protection Agency has determined that EDB is a probable human carcinogen. 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 1,2-dibromoethane?

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

Should I continue to use my drinking water if 1,2-dibromoethane is found?

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 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 EDB at: www.atsdr.cdc.gov/tfacts37.pdf