



Pat Quinn, Governor

Illinois Department of Public Health

Environmental Health

FACT SHEET

Vinyl Chloride In Groundwater

What is vinyl chloride?

Vinyl chloride is a colorless gas that, at high levels, has a mild, sweet odor. Vinyl chloride is a manufactured substance, used mostly to make polyvinyl chloride (PVC) plastic products. Vinyl chloride can enter the air, soil and groundwater following improper disposal of chemical wastes.

How can I be exposed to vinyl chloride?

The most common way people are exposed to vinyl chloride is through breathing contaminated air. If your water supply is contaminated, showering, bathing, or cooking with the water can release vinyl chloride into the air where you can breathe it. Drinking contaminated water also can expose you to vinyl chloride. People may begin to taste vinyl chloride in water at 3,400 parts per billion (ppb). Vinyl chloride is not easily absorbed by the skin.

How can vinyl chloride affect my health?

Most of what we know about the adverse health effects of vinyl chloride comes from studies on male workers in the plastics industry and from animal studies. Breathing high levels of vinyl chloride (approximately 10,000,000 ppb) can make you feel dizzy or sleepy. Recovery is usually quick if exposure is stopped and fresh air is breathed. Animal studies show that exposure to high levels of vinyl chloride can damage the liver, lungs and kidneys.

Breathing very high levels of vinyl chloride over several years may cause immune disorders and damage to the liver, kidneys and nerves. Workers exposed to high levels of vinyl chloride for several years have higher rates of liver cancer. Pregnant women may have an increased risk of miscarriage and birth defects when exposed to very high levels of vinyl chloride in air. These high levels would not be expected in a home. The United States Environmental Protection Agency has determined

that drinking water with 2 ppb of vinyl chloride over an entire lifetime corresponds to an excess lifetime cancer risk of one in 10,000.

How can I reduce my exposure to vinyl chloride?

You should avoid drinking or cooking with water contaminated with over 2 ppb of vinyl chloride. Installation of an in-home activated carbon filter can remove most of the vinyl chloride from water. Using bottled water also will reduce exposure. If you use contaminated water for other uses in the home (i.e. bathing, and washing dishes), ventilate bathrooms, washrooms and kitchens during and after water use.

Tobacco smoke contains low levels of vinyl chloride, so limiting your exposure to cigarette and cigar smoke may help reduce your exposure to vinyl chloride.

How can I find out if my water is contaminated?

If you are connected to a public water system, your water is regularly tested for vinyl chloride. If you have a private well, you can get your water tested by a private laboratory listed in your local phone book. If vinyl chloride is detected in your water, contact your local or state health department.

Do standards exist for exposure to vinyl chloride?

The U.S. Environmental Protection Agency has set a maximum contaminant level of 2 ppb of vinyl chloride for public drinking water supplies. This standard is established to reduce the chance of adverse health effects from drinking contaminated water. This level also can be used as a guideline for private drinking water sources.

There are no standards set for the amount of vinyl chloride allowed in the air of homes. If you can smell vinyl chloride in the air, the level is too high.

Is there a medical test to determine if I have been exposed to vinyl chloride?

Vinyl chloride can be detected in the urine after recent exposures. This test is not routinely available at most medical facilities, and its results may not accurately reflect the level or the duration of the exposure. A positive test for vinyl chloride is not particularly useful in predicting future health effects.

Where can I get more information?

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.

Springfield, IL 62761
217-782-5830
TTY (All hearing impaired use only) 800-547-0466

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