

**Summary from the Health Advisory (HA)
for
1,1,2,2-Tetrachloroethane**

Prepared by Health and Ecological Criteria Division (HECD), Office of Science and Technology (OST), Office of Water (OW) for Office of Groundwater and Drinking Water (OGWDW), OW, U.S. EPA.

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This is a Summary derived from the [Health Advisory for 1,1,2,2-Tetrachloroethane](#), an unregulated contaminant occasionally found in drinking water. Health Advisories (HAs) serve as informal guidance on the concentrations of chemicals that may raise a health concern when spills or contamination situations occur. They are prepared for the Federal, State and local officials responsible for protecting public health. The guideline values are not enforceable Federal standards and are subject to change as new information becomes available.

What is 1,1,2,2-tetrachloroethane?

1,1,2,2-tetrachloroethane is a colorless to pale-yellow liquid with a sweetish, noticeable, chloroform-like odor. It is soluble in water (2.87 g/L at 20°C), and you should be able to smell it in water when the concentration is greater than 0.50 mg/L.

What are the uses of 1,1,2,2-tetrachloroethane?

Prior to the 1980s, 1,1,2,2-tetrachloroethane was used in the production of other chemicals, as a metal degreaser, an ingredient in paint removers, varnishes, lacquers, and photographic films as well as in the processing of fats and oils. It is no longer made commercially in the U.S. but some is imported and it can still occur as small amounts in adhesives, oils, grease and lubricants.

How does 1,1,2,2-tetrachloroethane get in my drinking water?

The waste by-products associated with commercial products that contain 1,1,2,2-tetrachloroethane or discharges from plants where it is produced as a byproduct in the synthesis of other chlorinated compounds can lead to the presence of 1,1,2,2-tetrachloroethane in drinking water in some locations.

How much 1,1,2,2-tetrachloroethane am I exposed to from sources other than my drinking water?

In a recent a Food and Drug Administration survey, 1,1,2,2-tetrachloroethane was not found in any of the foods sampled; therefore, exposure through food would be infrequent and due to accidental contamination. Levels in air in most locations are expected to be minimal because of the decline in the use of this chemical in the U.S. If you live near a

hazardous waste site where 1,1,2,2-tetrachloroethane has been found or near an industry where it is used or generated as a by-product there is a possibility that you might be exposed.

What adverse health effects have been observed in humans and animals exposed to high levels of 1,1,2,2-tetrachloroethane?

Liver effects are the most common concern following exposure from drinking water. Inhalation exposures in humans are associated with neurological effects such as headaches, dizziness, fatigue, tremors. These effects are not likely to occur when the exposure is from drinking water.

What are the amounts of 1,1,2,2-tetrachloroethane that might cause adverse health effects?

The EPA recommends that the concentration of 1,1,2,2-tetrachloroethane not exceed 3 mg/L for short term exposures (less than ten days). At this concentration, you should be able to smell the chemical in the water. If 1,1,2,2-tetrachloroethane were present in your drinking water at levels above 0.4 mg/L for several years, there could be damage to some of your liver cells. These values are believed to be protective for both children and adults. There are no reports of this chemical causing cancer in humans. It did cause liver tumors in mice and rats exposed to high levels for most of their lifetime. Based on the animal studies, exposure to concentrations greater than 0.0004 mg/L (0.04 µg/L) for many years might cause a slight increase in your risk for cancer.

How will I know if I have 1,1,2,2-tetrachloroethane in my drinking water?

The Federal Government does not regulate 1,1,2,2-tetrachloroethane in drinking water and, public drinking water systems are not required to monitor for this contaminant. Some states have drinking water standards or guidelines for 1,1,2,2-tetrachloroethane; these range from 0.17 µg/L to 2 µg/L. You may want to call your drinking water utility or state drinking water program to determine if monitoring is required in your state.

If there is no requirement for monitoring in your state, you can have your water analyzed by a laboratory that is certified for the analysis of similar compounds. The following EPA website provides a list of state certification officers or links to certified laboratories in your state: <http://www.epa.gov/safewater/labs/index.html>. The contacts provided may be able to assist you in finding an appropriate laboratory.

You can also call your local public health office or the Safe Drinking Water Hotline Phone: 800-426-4791- toll free; <http://www.epa.gov/safewater/hotline/index.html> to determine if they are aware of any problems with 1,1,2,2-tetrachloroethane in your area.

How can 1,1,2,2-tetrachloroethane be removed if it gets in my drinking water?

Adsorption to activated carbon is one method that can be used to remove 1,1,2,2-tetrachloroethane from contaminated drinking water. Many home treatment units (pour-through pictures and attachments to faucets) use activated carbon as part of the treatment process. If you use such a unit you should call the manufacturer to see if it can remove 1,1,2,2-tetrachloroethane.

How can I find out more about 1,1,2,2-tetrachlorethane?

The Drinking Water Health Advisory will provide additional detail about 1,1,2,2-tetrachlorethane. You can access the Health Advisory at www.epa.gov/waterscience/

Reference:

United States Environmental Protection Agency (U.S. EPA). 2008. Drinking Water Health Advisory 1,1,2,2-Tetrachloroethane. *Prepared by Health and Ecological Criteria Division (HECD), Office of Science and Technology (OST), Office of Water (OW) for Office of Groundwater/Drinking Water (OGWDW), OW, U.S. EPA.*