

# Trichloroethylene and drinking water

## What is trichloroethylene and where does it come from?

Trichloroethylene is a colorless or blue liquid that smells similar to chloroform and is used as a degreaser and in the production of textiles.<sup>1</sup> It is nonflammable and highly volatile. Trichloroethylene can enter drinking water through leaks, evaporation and spills from industrial storage tanks.

## How can trichloroethylene affect my health?

Trichloroethylene is a health hazard. The elderly and very young are particularly susceptible to the health effects of trichloroethylene.<sup>2</sup> Drinking water that has high levels of trichloroethylene over long periods of time can cause health effects such as:

- Central nervous system (CNS) impairment
- Harm to the kidney, liver and male reproductive system
- Increased risk of autoimmune disease
- Increased risk of cancer<sup>3</sup>

## When does trichloroethylene in drinking water become a health concern?

Trichloroethylene is measured in parts per billion (ppb). The federal government has established the safe drinking water standard (also called maximum contaminant level) for trichloroethylene as 5 ppb.

## What can I still use my water for if it is contaminated with trichloroethylene?

Water for drinking, beverage-making or food preparation can be obtained from a known safe source and used on a temporary basis. Other uses of water pose much less hazard, but are not entirely safe if trichloroethylene levels are significantly above the drinking water limit.

## Can I wash my food with trichloroethylene-contaminated water?

If trichloroethylene levels in your water are above 5 ppb, you should use bottled water or water from a safe source to wash, prepare and cook your food.

## Can I irrigate or water my garden with trichloroethylene-contaminated water?

Trichloroethylene can be taken up by plants and leach into ground water. Water containing trichloroethylene above 5 ppb should not be used for irrigating or watering.<sup>2</sup>

## What about bathing and showering?

Trichloroethylene can enter the body through the skin.<sup>2</sup> Since trichloroethylene easily releases from water into the air, bathing and showering with trichloroethylene-contaminated water may

increase exposure through inhalation. Bathing, swimming and showering with water containing trichloroethylene levels over 5 ppb is not recommended.

### **What about washing dishes, utensils and food preparation areas?**

Only a very small amount of water clings to smooth surfaces, like dishes. Water with trichloroethylene can be safely used to wash and sanitize dishes, tables and eating utensils.

### **What about general cleaning and laundry?**

Very little water remains on washed surfaces and in laundered fabrics. Water with trichloroethylene can be safely used for general cleaning and washing of clothing, bedding and linens.

### **What about my pets?**

Animals should not drink water with trichloroethylene levels above 5 ppb.

## **Learning about trichloroethylene levels in your drinking water**

### **For people on public water systems:**

Public drinking water providers must monitor for trichloroethylene and ensure levels remain below the drinking water standard of 5 ppb. Public water system monitoring results are available on the Oregon Drinking Water Services [Data Online](#) website. If your water comes from a community water system (you pay a water bill), your drinking water provider must provide a [Consumer Confidence Report](#) to its customers every year. This report contains the most recent trichloroethylene test results if detected. Contact your drinking water provider to request a copy of the most recent consumer confidence report.

### **For private well owners:**

If your drinking water comes from your own well, you will have to find an accredited laboratory that does water testing for private property owners. These labs can provide information and instructions for getting your well water tested. For a list of accredited laboratories for drinking water in Oregon refer to the following [link](#).

## **Removing trichloroethylene from drinking water**

### **Don't boil the water!**

There is no evidence that boiling removes trichloroethylene and boiling water may increase risk of breathing in trichloroethylene in contaminated steam.

### **For operators of public drinking water systems:**

Trichloroethylene can be reduced below 5 ppb in drinking water using granular activated carbon filtration. We recommend that you work with a professional engineer to determine the most appropriate treatment for your system. Not all kinds of treatment are effective, and no single

treatment method can remove all contaminants from water. Alternatives to treatment include developing a different water source or connecting to another safe water source in the area. Before selecting treatment equipment, contact [Oregon Drinking Water Services](#) for regulatory requirements for public water systems.

### Private well treatment options:

Treatment options are available to remove trichloroethylene from well water. The most commonly used option is granular activated carbon filtration.<sup>1</sup> Options include central treatment (at the well or at entry to home) or a point-of-use device (kitchen sink filter). A point-of-use device will not protect against inhalation risk from showering or bathing from taps not treated with a device.

Check to be sure any treatment system used is certified by a recognized, third-party testing organization that meets strict testing procedures established by the [American National Standards Institute](#) (ANSI) and the [National Sanitation Foundation](#) (NSF) International. Proof of certification should be available from the distributor or manufacturer. Alternatively, NSF certification for various treatment units may be verified through NSF or the [Water Quality Association](#).

Treatment equipment must be carefully maintained to work properly and might not be effective if trichloroethylene levels are very high. It is recommended that treated water be tested at least once a year. Untreated water should be tested at least every three years.

### For more information

- Private well owners that have health-related questions about trichloroethylene in water can call 971-673-0440 or email [general.toxicology@state.or.us](mailto:general.toxicology@state.or.us).
- For questions about treatment options for your domestic well, contact the drinking water specialist at your local or county health department. Here is a [list of local and county health departments](#) in Oregon with their contact information.
- [U.S. Environmental Protection Agency](#) – Basic information about trichloroethylene in drinking water

### References

1. USEPA. Basic Information about Trichloroethylene in Drinking Water. <http://water.epa.gov/drink/contaminants/basicinformation/trichloroethylene.cfm> (2014).
2. ATSDR. Toxicological Profile for Trichloroethylene. [www.atsdr.cdc.gov/ToxProfiles/TP.asp?id=173&tid=30](http://www.atsdr.cdc.gov/ToxProfiles/TP.asp?id=173&tid=30) (1997).
3. MDH. Trichloroethylene (TCE) and Your Health. [www.health.state.mn.us/divs/eh/hazardous/topics/tce.html](http://www.health.state.mn.us/divs/eh/hazardous/topics/tce.html) (2014).



This document can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request this publication in another format or language, contact Drinking Water Services (DWS) at 971-673-0405 or 711 for TTY.