

# Triclosan and Drinking Water

*Triclosan is a contaminant that has been found in waters that could be used as drinking water sources in Minnesota. The Minnesota Department of Health (MDH) developed a health-based guidance value for triclosan in drinking water and, based on this value, does not expect levels in drinking water to harm Minnesotans. MDH does not recommend using products containing triclosan unless instructed to do so by a health care provider.*

## What is triclosan?

Triclosan is widely used in personal care products that may be labeled as “antibacterial” or “antimicrobial,” including liquid soaps, toothpaste, and cleaning products. Triclosan is also used in some fabrics, toys, and kitchenware.

## Has triclosan been found in Minnesota waters?

Triclosan has been detected in Minnesota waters in studies conducted by the Minnesota Pollution Control Agency (MPCA), the U.S. Geological Survey (USGS), and the University of Minnesota. The USGS detected triclosan at maximum concentrations of 4.3 parts per billion (ppb) in Minnesota wastewater and 0.31 ppb in Minnesota streams.<sup>1</sup> A 2012 MPCA study of Minnesota lakes reported triclosan was present at a maximum concentration of 0.0118 ppb.<sup>2</sup> MPCA monitoring has not detected triclosan in Minnesota groundwater.<sup>3</sup> There is no information about levels of triclosan in Minnesota drinking water.

## What is the MDH guidance value for triclosan in drinking water?

MDH developed a guidance value of 50 ppb for triclosan in drinking water.<sup>4</sup> A person drinking water at or below this level, whether briefly, occasionally, or daily for a lifetime, would have little or no risk of any health effects from triclosan.

## Can triclosan in drinking water affect my health?

Studies on the health effects of triclosan indicate that it is endocrine (hormonally) active and has the potential to affect the liver, blood, thyroid, and reproductive systems. Based on the levels of triclosan detected in Minnesota waters, exposure to triclosan from drinking water is not anticipated to be a health concern.

## At a Glance

### Triclosan is...

- an antimicrobial that is in some soaps and other products intended to give them additional bacteria-fighting qualities.

### Triclosan enters your body from...

- use of antimicrobial products that contain triclosan.

### Your exposure to triclosan can be reduced by....

- checking labels and avoiding products that contain triclosan.



### Triclosan in drinking water is safe if...

- the level is lower than the MDH guidance value of 50 ppb.

### Can I safely use products containing triclosan?

For most people, exposure to triclosan from occasional use of consumer products is below harmful levels. MDH does not recommend using products containing triclosan unless instructed to do so by a health care provider. Commercially available hand soaps and body washes containing triclosan have not been proven to be more beneficial than washing with regular soap and water. Studies indicate that triclosan use may promote the spread of bacteria that are resistant to antibiotics.

### How does triclosan get into the environment?

Triclosan commonly enters the environment through wastewater. Personal care products containing triclosan wash down drains into the wastewater system. Conventional wastewater treatment does not remove 100 percent of triclosan. Even though triclosan degrades rapidly in surface water, it is continuously replenished by ongoing discharges of treated wastewater.<sup>5</sup>

### What are the potential environmental impacts of triclosan?

Triclosan is harmful to aquatic plants. There is strong evidence that fish, aquatic plants and other aquatic life are more sensitive to triclosan than humans. Triclosan bio-accumulates in the aquatic food chain, especially in plants and the internal organs of fish. Limited studies show that triclosan may impact survival and reproduction in aquatic animals. Triclosan interferes with the normal endocrine system function in fish. However, these endocrine disruption studies were conducted at higher levels of triclosan than the levels found in Minnesota waters. Studies also show that triclosan may impact community composition of bacteria living in sediments. Moreover, in the environment, triclosan is transformed into potentially harmful breakdown products.<sup>6</sup>

### What Minnesotans Need to Know . . .

Triclosan is an antimicrobial ingredient in many products we use every day, with the result that many people have triclosan in their bodies. Many of the uses of triclosan, such as in handwashing soaps, are not necessary and result in triclosan entering Minnesota surface water. Triclosan in surface water can harm aquatic life and can break down into potentially harmful chemicals. Widespread use of triclosan could result in bacteria that are resistant to antimicrobials. Reducing use of products that contain triclosan will reduce your personal exposure and reduce the amount of triclosan that enters lakes and rivers.

### For more information contact:

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### The Contaminants of Emerging Concern (CEC) Program...

Evaluates health risks from contaminants in drinking water and develops drinking water guidance. MDH works in collaboration with the Minnesota Pollution Control Agency and the Minnesota Department of Agriculture to understand the occurrence and environmental effects of contaminants.

### References

1. USGS (2004). Presence and Distribution of Organic Wastewater Compounds in Wastewater, Surface, Ground, and Drinking Waters, Minnesota, 2000–02. Scientific Investigation Report 2004–5138. <http://pubs.usgs.gov/sir/2004/5138/>
2. MPCA (2013). Pharmaceuticals and Endocrine Active Compounds in Minnesota Lakes. <http://www.pca.state.mn.us/index.php/view-document.html?gid=19427>
3. Erickson, M.L.; Langer, S.K.; Roth, J.L., and S.E. Kroening, 2014, Contaminants of Emerging Concern in Shallow Groundwater in Urbanized Areas of Minnesota, 2009–2012: U.S. Geological Survey Scientific Investigations Report, in press.
4. Toxicological Summary: Triclosan. 2010 [www.health.state.mn.us/divs/eh/risk/guidance/gw/triclosan.pdf](http://www.health.state.mn.us/divs/eh/risk/guidance/gw/triclosan.pdf)
5. Singer H., Muller S, Tixier C, and Pillonel L. Triclosan: Occurrence and Fate of a Widely Used Biocide in the Aquatic Environment: Field Measurements in Wastewater Treatment Plants, Surface Waters, and Lake Sediments. Environ. Sci. Technol. 2002, 36, 4998–5004
6. USGS (2008). Leikera, T.J., Abney, S.R., Goodbred, S.L., Rosen, M.R. Identification of methyl triclosan and halogenated analogues in male common carp (*Cyprinus carpio*) from Las Vegas Bay and semipermeable membrane devices from Las Vegas Wash, Nevada.