

Monochloramine

Why is water disinfected?

Drinking water drawn from lakes, ponds and rivers must be disinfected to kill naturally-occurring bacteria, viruses and other pathogens that can cause serious illness and death.

How is water disinfected?

Water is disinfected in two stages. In Vermont, all water systems use chlorine as a primary disinfectant. Water systems must also use a secondary disinfectant to keep the water safe in the pipeline as it travels to customers.

What are disinfection byproducts (DBPs)?

Disinfection byproducts (DBPs) are formed when a disinfectant is mixed with the naturally-occurring organic material present in all surface water. The Environmental Protection Agency (EPA) regulates two classes of DBPs because they are believed to contribute to cancer and adverse reproductive outcomes.

What is the Stage 2 Disinfectants and Disinfection Byproduct Rule?

The EPA's Disinfectants and Disinfection Byproduct Rule changes the way that public water systems monitor for DBPs. The Rule lowers the acceptable average levels of DBPs across all monitoring points of a water system. Many systems that use chlorine for secondary disinfection have high average DBP levels. These high DBP levels will no longer be acceptable, and the water systems will be out of compliance with the EPA.

What is monochloramine?

Monochloramine is one of three disinfectants approved by the EPA for secondary water disinfection by public water systems.

Why is monochloramine used?

Monochloramine is used as a secondary disinfectant because it has several advantages over chlorine. Many water systems currently use chlorine for secondary disinfection and are considering changing to monochloramine for two reasons:

- Monochloramine is much less reactive than chlorine and forms less of the regulated DBPs.
- Monochloramine is more stable than chlorine, and keeps the water safer than chlorine as it travels to customers.

What is the health benefit of switching from chlorine to monochloramine?

The EPA estimates that the reduction in DBPs as a result of monochloramine use will prevent 280 cases of bladder cancer and 73 bladder cancer deaths each year.

Can everyone use water containing monochloramine?

Like chlorine, monochloramine must be removed from water that is used in home dialysis machines and fish tanks. Filters designed to remove chlorine from water used in home dialysis and fish tanks will not remove monochloramine.

Are there health concerns related to monochloramine?

There are no symptoms that have been associated with monochloramine at levels used to treat water. The Vermont Department of Health has searched and reviewed all available research and consulted with the Centers for Disease Control & Prevention (CDC) and EPA. We have found no credible evidence to show that the use of monochloramine to disinfect public drinking water is a threat to public health, or has been associated with adverse health effects.

We encourage anyone with health symptoms of concern to consult their health care provider.

For more information about monochloramine –

Vermont Department of Health: healthvermont.gov (then go to Contents A to Z)