

CHLORAMINATION

What are Trihalomethanes (THMs)?

THMs are chemical compounds that form when chlorine mixes with naturally occurring organic material in water at high levels. These compounds are suspected carcinogens. The Ministry of Environment and Health Canada have set a standard of 100 parts per billion (ppb) as the safe maximum level of THMs in drinking water, based on a lifetime of consumption.

Does Sydenham's Water Meet the Standard for THMs in Drinking Water?

No. The level of dissolved organic material in the source water has resulted in the formation of trihalomethanes that are on average above Ontario Drinking Water Standards. The use of ultraviolet light technology with a secondary disinfection by chloramination instead of chlorine as a disinfection method is expected to maintain the level of THM's below the 100 ppb limit and the anticipated new lower limit of 80 ppb.

Chlorine vs. Chloramines

There are many similarities between chlorine and chloramines. Both provide effective residual disinfection with minimal risk to public health. Both are toxic to fish and reptiles. Both chlorine and chloramines react with other compounds in the water to form what are called "disinfection by-products."

The difference is that chlorine forms many byproducts, including trihalomethanes (THM) and haloacetic acids (HAA), whereas chloramine forms a significantly lower amount of THMs and HAAs. One of the principal benefits of chloramine is that its use reduces the overall levels of these regulated contaminants compared to chlorine.

Why is Sydenham Converting to Chloramination?

Chloramine is a more stable and persistent disinfectant. It preserves the quality of the purified water as it travels through the water distribution system. Chloramine helps to reduce disinfection by-products such as THMs and HAAs in the water.

Chloramine reduces the taste and odour of chlorine in tap water.

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What is Chloramination and is it Safe?

Chloramination is the combination of chlorine and a small amount of ammonia. Together, these two chemicals target the formation of chloramines. Chloramination has been used safely in Canada and the United States for years. Many water utilities are in the process of switching to chloramination because of its benefits.

The Ontario Ministry of Environment (MOE) and Health Canada recognize chloramination as a safe disinfectant that reduces the formation of disinfection by-products and disease-causing organisms. Chloraminated water is safe for drinking and all water uses.

Note: Kidney dialysis patients and fish owners must take special care with chloraminated water.

Adverse Effects

Chloramine is toxic to fish and reptiles (chloramine, like chlorine, comes in direct contact with their bloodstream through their gills) and must be removed from water added to aquariums and fish ponds. It must also be removed from water prior to use in dialysis machines, since water comes into direct contact with the bloodstream during treatment. When drinking water, people have no trouble digesting chlorine or chloramine at the levels found in our drinking water; this water is not introduced directly into the bloodstream.

FS235
23/02/10