

DOMESTIC WATER DISINFECTION USING CHLORAMINES

QUESTION & ANSWER SHEET

Health Canada regulations require water utilities to control levels of regulated disinfection byproducts (DBPs). DBPs are chemical compounds that are formed when chlorine mixes with small quantities of natural organics commonly found in surface water (such as Gander Lake) but usually not found in groundwater.

Chloramines have been proven to produce lower concentrations of DBPs than chlorine because chloramines are less reactive with natural organic matter. Chloramines have proven to be effective in improving water quality for water systems utilizing surface water sources. The pilot study will introduce trace amounts of ammonia to the chlorine which will form chloramines. This will replace chlorine as a secondary disinfectant for areas serviced by the Town of Gander.

What are chloramines?

Chloramines are disinfectants added to the water for public health protection. Chloramines are most commonly formed when ammonia is added to chlorine to treat drinking water. Chloramines provide long-lasting protection as they do not break down quickly in water pipes.

When will the change occur in the water system?

The pilot study is expected to begin during the first week of August, 2015, and will commence for a six (6) week period.

What can I expect to notice with the change?

Chloramination is expected to improve the taste and smell of the water delivered through the system. You may, however, notice an unfamiliar odor or taste for a few days when the change from chlorine to chloramines first occurs.

Are chloramines safe?

Chloraminated water is safe for people and animals to drink, cook with, bathe in, water the garden, and for all other general uses. However, as with chlorine, precautions must be taken to remove or neutralize chloramine during the kidney dialysis process, in the preparation of water for fish tanks and ponds, and for businesses requiring highly processed water.

How many municipalities currently use chloraminated water?

Chloramines have been used safely in Canada, the United States and Great Britain for more than 90 years. There are currently over 100 municipalities in Canada that safely use chloramines. In NL, chloramine disinfection is currently used in St. John's and Dunville.

What stance does Health Canada take on chloramine?

Health Canada recognizes chloramines as a safe secondary disinfectant and an effective way to reduce DBP formation. They have guidelines for the recommended concentration of chloramines in drinking water, which the Town of Gander will be adhering to and closely monitoring.

Is it safe to wash open wounds with chloraminated water?

Yes. Chloraminated water is completely safe to use on cuts and wounds.

Are there any groups who must take special precautions with water containing chloramines?

There are three (3) groups that need to take precautions with chloraminated water:

- dialysis facilities
- fish, reptile and amphibian owners
- businesses or facilities that require highly treated water

These groups must remove the chloramines from the water prior to their use.

What special precautions do kidney dialysis patients have to take?

Chloramines, like chlorine, must be removed from the water before it can be used in kidney dialysis machines. Kidney dialysis patients should contact their physician or local kidney dialysis center for guidance on modifications to dialysis machines and procedures. Medical centers that perform dialysis are responsible for purifying the water that enters the dialysis machines.

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Kidney dialysis patients can still bathe, drink and cook with chloraminated water. The digestive process neutralizes the chloramines before they reach the bloodstream. It's only when water interacts directly in the bloodstream, as in dialysis, that chloramines must be removed.

Why is chloramine harmful for fish and amphibians?

Fish and some amphibians and reptiles pass water through their gills directly into the bloodstream. Like chlorine, chloraminated water can do harm if passed directly into the bloodstream. Chloramine can be removed from water with inexpensive water treatment products (drops or tablets) or specified carbon filters. These products are readily available at more pet supply stores.

If chloramines are harmful to kidney dialysis patients and fish, why are they not harmful to me?

Chloramines are harmful only when they enter the bloodstream directly, as in the kidney dialysis process. Chloramines are broken down by the saliva and further neutralized by stomach acid. They leave the body through human waste quickly and cause no adverse health effects.

How can I remove chloramines from my tap water?

Chloramine cannot be removed by boiling water, adding salt, or letting water stand still. Treatment devices to reduce chloramine levels are available. These devices should be independently tested and specifically certified to remove chloramines from water. Please contact a local carrier or home water filters for more information.

Generally, dialysis users can use ascorbic acid or granular-activated carbon filtration system designed to remove chloramine as provided. Fish and amphibian owners can use water treatment products or specified carbon filters before adding water to their tank or pond. Businesses requiring highly treated water will need to upgrade their current filtration and treatment system. Businesses may wish to contact their equipment supplier or a water treatment professional to review current operations.

I already have a water filter installed at my home, is it effective in removing chloramines?

Some modern household treatment and filter systems may remove chloramines. To verify whether your current treatment or filter removes chloramines, please refer to your original filter packaging or contact a local provider of home water filters.

Will pool owners need to treat chloraminated water differently?

As with chlorinated water, pool owners will need to maintain the same chlorine residual as before to prevent algae and bacterial growth. Pool supply stores can provide pool owners with more information.

Is chloraminated water safe for plants and animals that do not live in water, like my pet dog or cat?

Chloraminated water is as safe as chlorinated water for plants and animals that do not live in water. Chloramine is only dangerous for fish, reptiles, shellfish, and amphibians that take water directly into their bloodstream.

For more information related to chloramines and DBPs:

Health Canada:

<http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/chloramines/index-eng.php#Health>

Environmental Protection Agency (EPA):

http://www.epa.gov/ogwdw/disinfection/chloramine/pdfs/all29_q.pdf