

## **FACT SHEET: USING CHLORAMINES FOR DISINFECTING DRINKING WATER**

The Environmental Protection Agency (EPA) 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 but usually not found in groundwater. Chloramines produce lower concentrations of regulated DBPs than chlorine because chloramines are less reactive with natural organic matter. Currently, chlorine is being used to disinfect drinking water produced from Lake Murray. The addition of trace amounts of ammonia to chlorine forms chloramines in systems utilizing surface water sources improves water quality in an effort to ensure the public water system continues to comply with the EPA's increasingly stringent regulations on drinking water.

### **Why Disinfect Drinking Water?**

Without some type of disinfectant in drinking water, disease-causing organisms may exist and cause widespread health issues for a community.

### **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.

### **Which public water systems will be switching from chlorine to chloramine for its disinfectant?**

All systems that receive drinking water from the City of West Columbia's Lake Murray Water Treatment Facility will convert from chlorine to chloramines for disinfection of the drinking water. This includes the Joint Municipal Water & Sewer Commission, the Town of Lexington, the Town of Swansea, the Town of Pelion, and the City of West Columbia's customers in the areas along and adjacent to US Hwy 1 from Lexington to near Interstate Highway 26 and along and adjacent to US Hwy 378 from Lexington to near Interstate Highway 26.

### **When will the change occur in the water system?**

The conversion to chloramines is expected to begin during first week of September 2014 and will take several days to complete.

### **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 other cities around the country also switching from a chlorine disinfectant to a chloramine disinfectant?**

Many water utilities have already switched from chlorine to chloramines and have reported increases in customer satisfaction with the water's taste and odor.

### **Are chloramines safe?**

Yes, chloraminated water is safe for bathing, drinking, cooking and all everyday uses. Chloramines have been used safely in the U.S., Canada and Great Britain for more than 90 years. Other nearby cities, such as Columbia and Charleston, have been using chloramine as part of their water treatment process for years. The EPA estimates that more than one in five Americans regularly use drinking water treated with chloramines.

**What stances does the federal Environmental Protection Agency take on chloramine?**

The EPA recognizes chloramines as a safe disinfectant and an effective way to reduce DBP formation. In addition, the EPA states that water disinfected with chloramines that meets regulatory standards has no known or anticipated adverse health effects, including skin problems, breathing problems, digestive problems or cancers.

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

Yes. Kidney dialysis patients must remove chloramines from the water they use for dialysis treatment. Aquarium owners also must remove the chloramines from the water used for their fish in aquariums and ponds.

**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. Chloramines can be removed by adding ascorbic acid to the water or using a granular-activated carbon treatment. 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.

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.

**What does the change in water disinfection mean for aquarium owners?**

Chloramines, like chlorine, must be removed from the water before it is added to aquariums or fish ponds, including fish and lobster tanks in restaurants and stores. The ammonia used to form chloramines is toxic to fish and other aquatic life as it enters the bloodstream directly through the gills. The water can be purified for fish and other aquatic life by adding specific agents (sold at pet stores or other retail outlets with pet or aquarium supplies) to remove chloramines and ammonia or by using a high grade of granular-activated carbon to remove chloramines. Leaving water to sit is not a reliable method for removing chloramines from the water. Aquarium owners should visit local pet stores or other retail outlets with pet or aquarium supplies for dechlorination products and instructions. Water conditioners specifically designed for removing chloramines are commercially available.

**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?**

Unlike chlorine, chloramines can't be removed from drinking water by boiling water, allowing water to sit at room temperature over an extended period of time or by using reverse osmosis filters. However, there are commercial products available that remove chloramines from drinking water. Please contact a local carrier of home water filters for information on chloramine-removing filters.

**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.

A detailed EPA Fact Sheet on Chloramine Disinfection of Drinking Water can be found at:

[http://www.epa.gov/ogwdw/disinfection/chloramine/pdfs/all29\\_q.pdf](http://www.epa.gov/ogwdw/disinfection/chloramine/pdfs/all29_q.pdf)