



# Chloramine

## FACT SHEET

### Why do we need to add a disinfectant to drinking water?

As a safeguard to prevent waterborne illnesses, the State of Alaska requires public water systems to maintain a chlorine residual throughout the water system.

### What is a “chloramine”?

Chloramines are formed when chlorine is combined with a small amount of ammonia.

### Chlorine and chloramine — what’s the difference between these disinfectants?

- Chlorine is most commonly used because it’s quick, effective, safe, and is the least expensive method of water disinfection.
- Chlorine is quicker acting, but is used up faster as it reacts with contaminants in the water. It will also form chemical compounds called disinfection by products when it mixes with naturally occurring organic compounds.
- Chloramines are safe and effective, but react more slowly than chlorine. However, they stay active longer, and they reduce the formation of disinfection by products formed in water containing naturally occurring organics.

### Are chloramines safe?

Yes. Chloramines have been used safely in the United States and Canada for many years. The State of Alaska accepts chloramines as an approved disinfectant.

### Are there special considerations for potable water containing chloramines?

- kidney dialysis equipment
- aquariums
- rubber plumbing products

### Kidney Dialysis

In the dialysis process, water comes in contact with the blood across a permeable membrane and must be pretreated to remove chlorine and ammonia. Medical centers that perform dialysis are responsible for purifying the water that enters the dialysis machines. Persons with home dialysis machines should check with their physician or equipment supplier. Please contact your doctor and dialysis equipment provider for more information and review the review the Kidney Dialysis Fact Sheet.

### Aquariums

Chlorine and ammonia are toxic to all fish since water enters through the gill structure and goes directly in the bloodstream. Chloramines stay in the water for up to several weeks, so a dechlorinating agent must be added to remove it. This includes the water for both freshwater and saltwater aquariums.

### How much of a dechlorinating agent, or what type of filter should be used?

Pet stores should have a product that will quickly neutralize both the chlorine and ammonia molecules. Also, ask your pet supplier the best filtration equipment to use. See the fish and aquarium fact sheet for more information.

## **Will reverse osmosis remove chloramines?**

No. Salts can be caught by the permeable membranes, but chloramines pass through easily.

## **Can persons with kidney ailments, diabetes, or on low sodium diets drink chloraminated water?**

Yes. People with serious medical conditions should contact their doctor. It can be used for any other purpose except for dialysis treatment.

## **What about people who are sensitive to chemicals?**

The amount of chloramines will be extremely small — no more than 2.5 parts per million as it leaves our disinfection facility. The ratio will be four parts chlorine to one part ammonia to form monochloramine. If you are concerned that this small amount of ammonia could cause problems for you, it would be best to check with your physician. Additionally, Granular Activated Carbon (GAC) filters on your water supply, if properly maintained, will remove the chloramines.

## **Do home water softeners remove chloramines?**

Only if the softeners have a Granular Activated Carbon (GAC) filter.

## **What effect does chloramine have on rubber?**

Rubber plumbing parts or liners may disintegrate over a period of time. Durable replacement parts are available at most plumbing stores.

## **Food and beverages**

Food and beverage manufacturers and food and beverage providers may need to modify their water filtration systems or consider adding one.

## **Will chloramines harm plants?**

No. It is safe to water plants of any type, including ornamentals, vegetables, fruit and nut trees.

## **Are chloramines new?**

No. Many counties and cities in the U.S. have used chloramines for decades. Chloramine has been approved by the EPA for use as a municipal drinking water disinfectant for decades. It is a water quality improvement as it reduces disinfection byproducts (DBP) levels.

## **Will chloramination affect routine household water uses?**

No. Chloramination will not affect routine water uses such as food preparation, household laundering and dishwashing, watering plants, etc. Chloramines is not reported to have any effect on plants of any type, and will usually be removed by the high chlorine demand in the soil.

## **When will the conversion to chloramine occur?**

KPU plans to begin using chloramine during the summer of 2010. The construction project for the conversion to chloramine disinfection is currently taking place at the water disinfection facility on Schoenbar Rd. It is anticipated that the project will be completed in summer 2010. Following completion of construction, training of water plant staff, and public education, KPU will begin adding small doses of ammonia to the water as it enters the water storage and distribution system. As start-up of the system gets nearer, KPU customers will be notified of the conversion date.