



Mountain House Community Services District

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CHLORAMINE FAQ'S

1. What is chloramine?

Chloramine is a disinfectant used in drinking water to remove bacteria and viruses. It consists of chlorine and ammonia.

2. Why does the Mountain House Community Services District (MHCS D) use chloramine instead of chlorine?

The MHCS D uses chloramines for many reasons. (1) Chloramine is a better choice as a final disinfectant than chlorine alone because chloramine produces lower levels of disinfectant by-products like trihalomethanes, which are suspected carcinogens that form when chlorine mixes with natural organic substances in water. (2) The use of chloramines enables MHCS D to comply with more stringent regulatory standards (present and anticipated). (3) Chloramine is more stable than chlorine and lasts longer in the distribution system. This provides increased protection from bacterial and viral contamination.

3. When did the conversion from chlorine to chloramine occur?

Conversion occurred on November 12, 2013.

4. How many utilities currently use chloraminated water?

Most bay area utilities and many communities nationwide have already switched over to chloramine for drinking water disinfection. Local water providers include: the city of Tracy, Alameda County Water District, East Bay Municipal Utility District, Marin Municipal Water District, and Santa Clara Valley Water District. Some water providers in the United States have been using it for over 80 years.

5. Does the water taste different after the conversion to chloramine?

Possibly. Most consumers did not notice the change. In Fact, many consumers from other utilities including MHCS D report chloramine improves the taste and odor of drinking water.

6. Is chloraminated water 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 chlorine during the kidney dialysis process, in preparation of water for fish tanks and ponds, and for businesses requiring highly processed water.

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7. Is it safe to wash open wounds with chloraminated water?

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

8. How will chloramine affect household plumbing, pipes and water heaters?

After the conversion, rubber parts on some household plumbing and water heaters may degrade faster than previously experienced. When replacing rubber plumbing parts ask for chloramine resistant parts, which are readily available. Plumbing and hardware supply stores and plumbers will be able to provide further information.

9. Do I need to take any precautions or do anything different when using chloraminated water?

Only three special groups need to take precautions with chloraminated water: fish, reptile and amphibian owners, dialysis facilities, and businesses using or requiring highly treated water.

10. What types of businesses will be affected?

Businesses using highly processed water may be affected. Types of businesses may include: laboratories, microchip manufacturers, biotech companies, soft drink bottlers, photography labs, or restaurants or seafood suppliers with fish tanks. Businesses should contact a water treatment professional or an equipment supplier to review their treatment process.

11. Why is chloramine harmful for fish and amphibians?

Fish and some amphibians and reptiles pass water through their gills 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 most pet supply stores.

12. Why is chloramine harmful for dialysis patients?

Like chlorine, chloramine can harm kidney dialysis patients during the dialysis process if it is not removed from water before it passes into the bloodstream. The California Department of Public Health Services (DPH) will inspect and certify that any dialysis facilities in the MHCS D's service area are prepared prior to the conversion. Like everyone else, dialysis patients can drink chloraminated water because the digestive process neutralizes chloramine.

13. How can I remove chloramine from my water?

Chloramine cannot be removed by boiling water, adding salt or letting water stand still. Treatment devices to reduce chloramine levels are also available. These devices should be independently tested and specifically certified to reduce chloramine. Although some home filtration systems will reduce the level of chloramine from water, they will not remove it completely.

14. How can sensitive users remove chloramine from water?

California Department of Public Health Services (DPH) will oversee the upgrades of dialysis facilities and equipment. Generally, dialysis providers use ascorbic acid or a granular-activated carbon filtration system designed to remove chloramine. Fish and amphibian owners can use water treatment products or specified carbon filters before adding water to their tank or pond. Businesses

may need to upgrade their current filtration system and treatment system, and may wish to contact their equipment supplier or a water treatment professional to review current options.

15. Will pool owners need to treat chloraminated water differently?

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

16. 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.

17. If chlorine and ammonia are toxic to mix at home, why is it safe to drink chlorine and ammonia in the form of chloramine?

Household chemical cleaners such as chlorine bleach and ammonia are sold as highly concentrated solutions; the hazardous nature of a mixture of these chemicals is due to their high concentrations. In comparison, the concentrations of chlorine and ammonia added to drinking water for disinfection are very low, so low that concentrations are expressed in “parts per million” or ppm. After the conversion to chloramine, average chlorine concentrations in water will be about 2 ppm; ammonia concentrations will be even lower at 0.5ppm. As an analogy, one ppm represents about 5 tablespoons in a 20,000-gallon swimming pool.

18. Where can I get more information?

The MHCS D has specific information for dialysis patients, and fish and amphibian owners below.

DIALYSIS FACILITIES AND PATIENTS

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What do dialysis patients and providers need to know?

Like chlorine, chloramine can harm kidney dialysis patients during the dialysis process if it is not removed from water before it passes into the bloodstream. It is safe for dialysis patients to drink, cook and bathe in chloraminated water because the digestive process neutralizes chloramine before it enters the bloodstream.

How do we prepare for the chloramine?

California Department of Public Health Services (DPH) will inspect dialysis facilities and equipment to ensure providers successfully upgrade their dialysis equipment to remove chloramine before the conversion. Dialysis units must be prepared for the anticipated chloramine concentration of 2 to 4 milligrams per liter. The maximum concentration allowed by law is 4 milligrams per liter.

Two methods are typically used to remove chloramine from water before dialysis.

- Ascorbic acid, or
- A granular activation carbon filtration system specifically designed to remove chloramine

Home dialysis patients should work with their home dialysis facility and physician to make necessary adjustments to their equipment.

Will boiling water remove chloramine?

Chloramine cannot be removed by boiling water, adding salt or letting water stand in an open container to dissipate the chloramine.

Need more information?

For additional information, contact your dialysis provider or the TransPacific Renal Network:

TransPacific Renal Network
Network #17
4470 Redwood Highway, Suite 102
San Rafael, CA 94903
Phone: 415-472-8590
Fax: 415-472-8594
www.network17.org

For questions about the chloramine disinfection, please contact the Public Works Department at (209) 831-2300 or visit our website at www.ci.mountainhouse.ca.us

PROTECT YOUR FISH, AMPHIBIANS AND REPTILES

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How are fish, amphibians and reptiles affected?

Chloraminated water passes through gills, directly entering the fish, amphibian or reptile bloodstream. Chloramine must be removed as it binds to iron in red blood cell hemoglobin, causing reduced cell capacity to carry oxygen. However, chloraminated water is safe for people, and animals to drink as it is neutralized by the digestive process. It is also safe to cook with, bathe in, and for other general uses.

How do I prepare for chloramine?

Just like chlorine, chloramine will need to be removed from water for use with fish, amphibians and reptiles. Chlorine and chloramine removal products, listed below, are available at fish and pet supply stores.

- Treatment products (drops or tablets) that remove both ammonia and chlorine, biological filter (for ammonia) and chemical agent (for chlorine).

It has been reported that high quality activated carbon filtration and reverse osmosis systems can remove chloramine under optimum conditions, but are expensive and must be closely monitored to ensure their effectiveness.

Will boiling remove chloramine?

Chloramine cannot be removed by boiling water, adding salt, or letting water stand in an open container to dissipate the chloramine.

How can I test my water?

Aquarium owners will want to test their water for ammonia concentrations in addition to chlorine. A test kit with the correct active agents for ammonia can be helpful for monitoring. Two basic kits are available and should be selectively used:

- **Nessler reagent.** This kit will give a faster reading, but will also give a false reading if ammonia binders have been used.
- **Salicylate reagent.** This kit provides an accurate reading when ammonia binders have been used.

Any tips for aquarium owners?

Chloramine is toxic to both fresh and salt water fish. Drinking water used with artificial sea salts for makeup water in salt water fish tanks must have the ammonia and chlorine removed first.

How will chloramine affect ponds?

Ideally chloramine should be removed from water before being added to a pond. The San Diego Koi Club suggests the following guidelines from their experience:

If less than one percent of the total water volume of your system is replaced at any one time, the pond should absorb new chloraminated water with little to no impact on fish.

If one to ten percent of pond water volume is replaced, sodium thiosulfate and a biological filter effectively remove chloramine.

If more than ten percent pond water volume is replaced, an ammonia binder is needed.

Need more information?

The following resources may be helpful to you:

www.sfaquarium.org

www.sfbakc.org

www.vcnet.com/koi_net

www.koiclubsandiego.org

www.aquariacentral.com

For more information, please contact Mike Buckley, WTP Superintendent, at (209) 832-5061 or Nader Shareghi, Public Works Manager, at (209) 831-2300.