

Castaic Lake Water Agency Conversion to Chloramines Answers to Questions Most-likely to Come Your Way

What are chloramines?

- ◆ Chloramines are a combination of chlorine and ammonia and are one of several U.S. Environmental Protection Agency (EPA) approved disinfectants used to remove pathogenic (disease causing) microorganisms in water. (EPA 1994)

What are the benefits to converting to chloramines?

- ◆ Chloramines last longer than chlorine in water and more effectively remove pathogens including bacteria and viruses. Chloramines create fewer byproducts, such as trihalomethanes (THMs). THMs are suspected carcinogens that form when chlorine mixes with natural organic substances in water. (Kirmeyer et al., 2003)

Are there any drawbacks to converting to chloramines?

- ◆ Like many chemical agents, there are a few drawbacks to using chloramines. Similar to chlorine, chloramines are dangerous to kidney dialysis patients and aquatic pets. Specific steps must be taken to remove chloramines for both. (More information on how to remove chloramines is available below.)

Chloramines are also susceptible to nitrification, which results in bacterial growth if water is left sitting for long periods of time. Castaic Lake Water Agency (CLWA) has made capital improvements aimed at decreasing water stagnation that diminish the likelihood of nitrification. Chloramines may also decay the rubber parts of household plumbing and water heaters more quickly. (Kirmeyer et al. 2003)

Why will CLWA convert to chloramines?

- ◆ CLWA will convert water disinfection treatment from chlorine to chloramines in order to meet national surface water standards required by the EPA. The changeover in the treatment process will take place on or after April 15, 2005. (EPA, 1994)

Before deciding to convert, CLWA spent several years testing, planning and reviewing water treatment practices. The conversion was approved by the California Department of Health Services (CDHS), which oversees compliance with federal requirements of the Safe Drinking Water Act.

Are chloramines safe?

- ◆ Yes, chloramines have been safely used in the United States since the early 1900s, and are commonly used in southern California, across the nation, and worldwide. Chloraminated water is safe for the general public and for people with suppressed immune systems or other diseases. Like chlorine, chloramines will be **safe for everyday uses like drinking, bathing and cooking for people, dogs and cats**. However, as with chlorine, chloramines must be removed or neutralized for aquatic animals and kidney dialysis patients. (US DHHS 1992)

What is nitrification? Will the conversion cause nitrification in my drinking water?

- ◆ Nitrification is the biological oxidation of ammonia, which causes an increase of chloramine demand, allowing for bacterial regrowth. For nitrification to occur, water must be left standing in warm, dark conditions. Chlorine is the best way to treat nitrification.

CLWA and water purveyors have taken steps to ensure the general population **will not** experience nitrification. Residents and businesses with their own reservoirs may experience nitrification if water sits for extended periods of time, and these customers will need to treat water with chlorine before use. Nitrification will not occur in covered swimming pools during the winter, as conditions are too cold. However, chlorine levels should be maintained at all times to prevent algae growth. Residents and businesses with emergency preparedness water drums will need to change water every three to six months and treat water with chlorine tablets before consumption.

Who else uses chloramines?

- ◆ Most major utilities in California use chloramines as the drinking water disinfectant. In Southern California, cities like Los Angeles, San Diego, Burbank and Long Beach have converted to chloramines. In fact, the Metropolitan Water District of Southern California has used chloramines since the mid 1980s.

How do I keep my aquatic animals safe?

- ◆ Just like chlorine, chloramines can harm all saltwater and freshwater fish, shellfish, amphibians and some reptiles because they take chloramines directly into the bloodstream through their gills or skin. Prior to the conversion, pond and aquarium owners will need to purchase a new type of water conditioner or filter to remove chloramines. All pet supply stores, aquarium shops and veterinarians have been informed of and educated on the conversion and are prepared to advise customers on the best treatments for tanks and ponds.

Please note that although boiling water, reverse osmosis, salt additives, and letting water sit for a few days are practices sometimes used to remove chlorine, they do NOT remove chloramines.

Will aquatic life in the Santa Clara River be affected by wastewater sent into the river?

- ◆ No. By the time water reaches the Santa Clara River, it has been through the Sanitation Districts of Los Angeles County's wastewater treatment facilities. Chloramines are removed during the treatment process.

How will chloramines affect kidney dialysis patients?

- ◆ Like chlorine, chloramines can harm kidney dialysis patients if they are not removed before water mixes with the patient's bloodstream. However, kidney dialysis patients can safely drink chloramines because the body naturally neutralizes them before they enter the blood stream. **All Santa Clarita Valley kidney dialysis treatment facilities will be ready for the conversion.** Equipment and facilities will be inspected and certified by the CDHS prior to the conversion.

How will chloramines affect my pool and spa water?

- ◆ Although the water is completely safe, chloramines may cause changes to chlorine levels in swimming pools and spas. You will need to test your swimming pool or spa water to make sure the amount of chlorine is adjusted to appropriate levels. Pool services and pool supply stores have been informed of the conversion and will be able to supply appropriate test kit information.

Do businesses need to take any precautions for chloramines?

- ◆ Businesses or industries that use water in their treatment process will need to remove chloramines from the water just as they currently do with chlorine. Chloramines may affect yeast growth for beer manufacturers and film development for photo labs. Chip manufacturers and pharmaceutical companies require ultra pure water for their manufacturing process, and the switch to chloramines may require companies to adjust or upgrade their current treatment system.

How do I remove chloramines for home brewing or home photo labs?

- ◆ Granular Activated Carbon (GAC) filters can be used to remove chloramines and other byproducts if the filter is followed by a reverse osmosis process. Several companies offer GAC filters and systems in the Santa Clarita Valley. Carbon filters will need to be changed often. (CDM, 2003)

Is it safe to wash an open wound with chloraminated water?

- ◆ Yes. It is safe to use chloraminated water in cleaning an open wound. (US DHHS 1992) (EPA 1994)

Will chloramines make our water taste better?

- ◆ After a switch to chloramines, customers typically notice some aesthetic difference in their water. **Chloramines should have less taste and odor than chlorine.**

How will chloramines affect my automatic water softener?

- ◆ Chloramines will not make water softer, and will not affect automatic (“self-regenerating”) water softeners. It is important to note that since March 2003 it has been illegal to install automatic water softeners, the kind to which you add salt or potassium, in Santa Clarita Valley homes and businesses. The Sanitation Districts of Los Angeles County are asking residents still using automatic water softeners, which cause a chloride (salty) waste, to unplug their systems immediately. Water currently released from wastewater treatment facilities into the Santa Clara River cannot remove chloride, which can harm downstream aquatic life and agriculture. For more information or for a list of water softening alternatives, visit www.lacsd.org/chloride.

What can I do for plumbing parts that may corrode due to chloramines?

- ◆ As rubber plumbing parts wear out, consumers should replace rubber plumbing components with chloramines-resistant materials such as: high quality rubber (synthetic polymer) parts, flexible copper tubing, tubing made of corrugated stainless flex, or newer neoprene braided stainless steel. (Kirmeyer et al., 2003)

Who will the conversion affect?

Updated 2/9/05

- ◆ All water suppliers in the Santa Clarita Valley will undergo the conversion. They are: CLWA Santa Clarita Water Division, Los Angeles County Waterworks District #36, Newhall County Water District and Valencia Water Company.

How has CLWA notified people about the conversion?

- ◆ CLWA began the notification process last summer by sending letters about the conversion to all Santa Clarita Valley businesses. Letters with more specific information were sent to pet and aquarium stores, veterinarians, doctors, kidney dialysis centers, pool service providers, pool supply stores, public pools, plant nurseries, and golf courses. By the time of the conversion, a representative from CLWA will have met with and provided posters and take-away postcards to pet and aquarium stores, veterinarians, pool supply stores, and pool service providers. CLWA will also help train nurses and doctors at kidney dialysis centers.

CLWA will have also taken steps to alert residents through letters inserted into water bills, newsletters and door hangers as well as advertisements on cable television and radio, in movie theaters, and in local newspapers.

Who should I call for questions or concerns?

- ◆ Those with questions concerning the conversion can call (661) 297-1600 or visit the CLWA website at www.clwa.org.

References:

Environmental Protection Agency. 1994. Drinking Water Criteria Document For Chloramines Final Draft ECAO-CIN-D002. March, 1994. <http://www.epa.gov/ncea/pdfs/water/chloramine/dwchloramine.pdf>

CDM (2003), Camp Dresser & McKee, Inc. Technical Memorandum: Home Removal Methods for Chloramine, April 21, 2003.

Kirmeyer et al. (2003), Optimizing Chloramine Treatment, Second Edition, AWWA Research Foundation, Denver, CO.

U.S. Department of Health and Human Services. NTP TR 392 Toxicology and Carcinogenesis Studies of Chlorinated Water (CAS Nos. 7782-50-5 and 7681-52-9) and Chloraminated Water (CAS No. 10599-90-3) (Deionized and Charcoal-Filtered) in F344/N Rats and B6C3F1 Mice (Drinking Water Studies) March 1992.

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