

**QUESTIONS AND ANSWERS ABOUT CHLORAMINES
AND PROPOSED CHLORAMINES CONVERSION IN KAGEL CANYON**

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Q: Why is it necessary to disinfect drinking water and what is currently being used for disinfection in Kagel Canyon?

A: Drinking water must be disinfected to prevent the growth of harmful bacteria, viruses, and other microorganisms that can cause serious illness and/or death. If water is not disinfected, these organisms can grow in the pipelines that transport water from its sources to homes. Currently, the Los Angeles Department of Water and Power (LADWP) and the Los Angeles County Waterworks District No. 21, Kagel Canyon, use chlorine for disinfection of drinking water.

Q: Why are LADWP and the Los Angeles County Waterworks District No. 21 converting to chloramines for disinfection?

A: Chlorine reacts with naturally-occurring organic material found in surface water, forming disinfection by-products. Recently, the water quality standard for disinfection by-products was made more stringent by the U.S. EPA and the State. The new standard was prompted by studies linking the chlorine disinfection by-products to higher risk of cancer. To comply with the more stringent standard, LADWP had to change its disinfectant to chloramines.

Q: Are there other water agencies using chloramines for disinfection of drinking water?

A: Chloramines disinfection is widely used by water companies throughout the United States and has been in use for over a century. According to the Federal EPA, a survey in 1998 identified more than 68 million people drinking water disinfected with chloramines. Here in California, two-thirds of the water companies use chloramines to disinfect their drinking water, including Metropolitan Water District of Southern California, which provides treated drinking water to 18 million residents in six counties.

Q: Are chloramines safe for disinfection of drinking water?

A: Yes. There is no risk associated with using water properly disinfected with chloramines.

Q: What are chloramines and how do they prevent the formation of carcinogenic trihalomethanes in water?

A: Chloramines are a disinfectant that is formed by mixing five parts of chlorine with one part of ammonia. Essentially, we tie up chlorine with the ammonia, and as a result, prevent it from reacting with the organic materials to form the carcinogenic trihalomethanes. Chloramines last longer than chlorine in pipelines, but have less disinfection power than chlorine. However, chloramines are added to water at a level that ensures their effectiveness in preventing harmful bacteria from growing in pipelines.

Q: Do chloramines affect aquatic animals and how can they be protected?

A: Yes. Just like chlorine, chloramines can harm fish, shellfish, amphibians, and some reptiles because these animals absorb chloramines directly into their bloodstream through their gills or skin. Aquatic pet owners can purchase a water conditioner or filter to remove chloramines and protect their pets.

Q: Are there home drinking water treatment devices that can be used to remove chloramines?

A: Yes. Home drinking water treatment devices that remove chloramines are filtration systems with granular activated carbon or charcoal. The National Sanitation Foundation (NSF) independently tests and certifies water treatment systems for chloramine removal. Information on NSF Certified Drinking Water Treatment Units can be obtained either on NSF's Web site (<http://info.nsf.org/Certified/DWTU/>), or via email info@nsf.org.

Other at home alternatives include placing few slices of orange, lemon, mango, apple, or strawberries in a glass or water pitcher as well as steeped tea for few minutes, and coffee. For bathing, vitamin C shower heads can be purchased on the internet, and vitamin C tablets can be used for baths.

Q: Can water treated with chloramines be used for dialysis?

A: Both, water treated with chlorine or chloramines may need additional treatment if used for specialized purposes. Both, chlorine and chloramines must be removed from water used in dialysis machines because this water comes into direct contact with the blood. Dialysis patients should consult with their physicians if they have concerns about using water treated with chlorine or chloramines. Dialysis patients can safely drink water treated with chlorine or chloramines.