HOW CAN LEGIONELLA BE CONTROLLED IN RESIDENTIAL HOMES?

Residential customers can reduce or eliminate potential exposure to Legionella by setting their water heater at or above 140°F (60°C). This is in accord with U.S. Centers for Disease Control (CDC) guidelines and Standard 188 by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), which specifies how to set up and implement a water management program to control Legionella.

However, maintaining such high water temperatures can introduce a scalding risk, so thermostatic mixers may be used to minimize this risk.

WHAT ARE LARGE BUILDING BEST PRACTICES FOR CONTROL OF LEGIONELLA?

The most common location for getting Legionellosis is in large buildings, such as hotels and hospitals. Large building owners should follow the ASHRAE Standard 188 and CDC Guidelines for Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings.

WHAT ARE GREEN BUILDING GUIDELINES TO MINIMIZE LEGIONELLA?

Although Green Building designs can provide significant environmental benefits, they can also pose unique challenges related to Legionella due to elevated water age and loss of chlorine or chloramine residual. When designing Green Buildings, special features such as automated dead-end flushing should be considered. In addition, ASHRAE Standard 188 and other references by EPA, CDC, etc. should be followed. See list of references on back of this fact sheet.

CONTROL AND MONITORING FOR LEGIONELLA IN DRINKING WATER

The Environmental Protection Agency (EPA) has an established Maximum Contaminant Level Goal (MCLG) of zero for the presence of Legionella in drinking water. The SFPUC meets this non-enforceable guideline through compliance with EPA's Surface Water Treatment Rule, which requires water systems to filter and/or disinfect water so that microorganisms are removed and/or inactivated.
Increasing the temperature of hot water systems and ensuring proper biocide treatment of cooling towers may limit exposure to Legionella.

Building and hospital standard operational procedures are used to prevent growth and transmission of Legionella. Effective control measures include disinfection, copper-silver ionization, maintenance of cooling towers, maintaining water in hot water storage tanks at temperatures above 140°F (60°C) and ensuring circulating water is higher than 124°F (51°C). Maintaining such high water temperatures can introduce a scalding risk, so thermostatic mixers may be used to minimize this risk.

**CONTROL AND MONITORING FOR LEGIONELLA IN DRINKING WATER**

In the United States, public water systems are required to maintain either a chlorine residual or a chloramine residual in distribution systems. From 2003 to 2005, the U.S. Centers for Disease Control and Prevention (CDC), San Francisco Department of Public Health (SFDPH), and San Francisco Public Utilities Commission (SFPUC) conducted a special study of Legionella during the SFPUC conversion from chlorine to chloramine. Based on monitoring at 53 buildings in San Francisco, conversion to chloramine reduced the occurrence of Legionella colonies in hot water systems from 60% to 4% (AWWA, 2008). As of August 2022, the SFPUC continues to serve our customers by participating in industry research including Water Research Foundation Project 5156, which studies the occurrence of Legionella in drinking water distribution systems.

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**CONSUMER RESOURCES: REGULATION/HEALTH**

- CDC Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings (2021)
  https://www.cdc.gov/legionella/wmp/toolkit/index.html
- CDC Legionella Information
  https://www.cdc.gov/legionella/about/index.html
  https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/LegionellosisFactSheet.pdf
- EPA: “Surface Water Treatment Rule”
  https://www.epa.gov/dwreginfo/surface-water-treatment-rules
  https://www.epa.gov/ground-water-and-drinking-water/technologies-legionella-control-premise-plumbing-systems
- SFPUC Annual Water Quality Report
  https://sfpuc.org/accounts-services/water-quality/annual-water-quality-reports
  https://www.who.int/publications/i/item/9241562978

We're Committed to Quality: Our highly trained chemists, technicians and inspectors consistently monitor the water we serve—throughout our system, every day of the year. For additional information and materials, please visit sfpuc.org/waterquality. For questions about YOUR water, please call 311. You can also visit 311.org.