

Fluoride Facts for Water Operators

Why Water Personnel are Oral Health Heroes

Community water fluoridation is a time-tested, cost-effective, and equitable solution for optimal oral health.

Good oral health is essential to overall health. Children with cavities suffer from pain, infections, and poor nutrition. An average of 34 million hours of school are lost per year in the U.S. because of dental problems. Poor oral health in adults also results in pain, infection, and tooth loss, along with difficulty obtaining a job due to the appearance of their teeth, and lost work hours. Dental problems result in a \$46 billion/year loss of production to the U.S. economy.¹

More than 75 years of research and practical experience shows optimal fluoridation of water supplies helps prevent cavities. Studies prove water fluoridation continues to reduce tooth decay by more than 25% in children and adults, even with the use of other fluoride products like toothpaste.¹

The benefits of community water fluoridation are recognized by the American Medical Association, American Water Works Association (AWWA), U.S. Public Health Service, Centers for Disease Control and Prevention (CDC), and the American Academy of Pediatrics (AAP). The CDC, AAP, and AWWA also provide fluoride information for water operators.^{2, 3, 4}



Water facilities and water operators perform a valuable public service by carefully adjusting the level of fluoride in water to improve the oral health of their community.



Almost 73% of the U.S. population on community water systems (209 million people) receive the benefits of fluoridation.⁵

Rules and recommendations for water facilities are designed to ensure operator and public safety.⁴

- OSHA requires **Safety Data Sheets (SDS)** be prepared by the manufacturers and suppliers of additive products. Each water facility should have the most current SDS sheets for the products they use. SDS sheets describe safe handling and use procedures of all materials.
- With the proper use of **Personal Protective Equipment (PPE)**, an operator will not have hazardous exposure to fluoride additive products. Fluoride additives present risks comparable to other water additives commonly used such as hypochlorite, quicklime, aluminum sulfate, sodium hydroxide, and ferrous sulfate. In some cases, the fluoride additives are much less dangerous than many other additives, including chlorine gas.
- The process of **adding fluoride to water has little impact on the acidity or pH of drinking water** and therefore will not corrode water pipes.

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- If a water system is reporting problems with corrosion from evaporating hydrogen fluoride (i.e., the glass in the facility has become “frosted”), there is a leak in the piping. **The storage tank and other locations in the feed system may not be sealed or correctly vented.** All fluoride products storage, handling, and feed systems should be vented to the outside of the building, and the system and piping should be pressure tested (low pressure is sufficient) to identify possible leaks which should be promptly corrected. With no system leaks, there will be no corrosion problems.
- All state requirements, as well as Ten States Standards, require **storage of ALL additives be separate from other additives used in the facility.** It is important to keep different materials separated, as there is the potential to react with each other.
- **The CDC offers a free, online training course for Water Operators to learn more about Fluoridation at www.cdc.gov/fluoridation-engineering/trainings/index.html.**

More questions? Check out ADA’s Fluoridation Facts, or contact Dr. Elizabeth Lense at lensee@ada.org.

References:

- ¹ U.S. Centers for Disease Control and Prevention (CDC). 2024. About Oral Health. www.cdc.gov/oral-health/about/index.html.
- ² CDC. 2024. Fluoridation Engineering and Operations. www.cdc.gov/fluoridation-engineering/?CDC_AAref_Val=https://www.cdc.gov/fluoridation/engineering/index.htm.
- ³ American Academy of Pediatrics. 2024. Helpful Information for Water Operators. ilikemyteeth.org/waterops.
- ⁴ American Water Works Association. 2016. *M4 Water Fluoridation Principles & Practices*, 6th Ed. www.awwa.org/portals/0/files/publications/documents/m4lookinside.pdf.
- ⁵ CDC. 2024. 2020 Water Fluoridation Statistics. www.cdc.gov/fluoridation/php/statistics/2020-water-fluoridation-statistics.html.

Fluoride: Small Solution. Big Benefits.

The **U.S. Department of Health and Human Services** announced a recommendation that community water systems adjust the amount of fluoride to **0.7 mg/L** to achieve an optimal fluoride level to help prevent tooth decay.

Just how much is 0.7 milligrams per liter of water? It's like ...



1 inch in 23 miles



1 minute in 1,000 days



1 cent in \$14,000