



The low levels of *Legionella* bacteria common in natural bodies of water can proliferate in man-made water systems and cause outbreaks of Legionnaires' disease. The temperature, design, and other conditions in domestic hot and cold water systems, decorative fountains, and cooling towers can be ideal for accelerated *Legionella* growth. As facilities such as hospitals, hotels, and large buildings implement their water management plans to address *Legionella* risks, copper-silver ionization can be an effective treatment option.

Understanding Copper-Silver Ionization (CSI)

Copper (Cu) and silver (Ag) have been valued for centuries for their antimicrobial properties. They are currently used in many industries as an alternative to traditional disinfectants in potable water systems to help manage bacteria, particularly those which cause Legionnaires' disease.

Copper-silver ionization can be an effective technology to reduce bacteria growth without generating halogen-based disinfection byproducts. CSI systems generate a controlled amount of copper and silver ions based upon water consumption. There are multiple ways copper and silver ions control *Legionella* including disrupting the cell membrane.

Why Choose Chem-Aqua EPI Ionization Systems?

We have decades of knowledge and experience solving water treatment needs across various industries. Our EPI Ionization Systems are designed to deliver precise amounts of copper and silver ions to domestic hot water systems to help control *Legionella* growth.

- **Control** – Copper-silver ion levels are controlled based on water usage to maintain consistent residuals.
- **Cell Design** – Powder-coated aluminum cell body with flanged connection simplifies maintenance and minimizes risk of leaks.
- **Routine Service** – Regular onsite service visits provided to monitor system performance, perform routine maintenance, and test water quality.



Manage



Protect



Sustainable



Cost Effective

EPI Ionization System Benefits

- **Effective Control** – Effective in helping to control *Legionella* bacteria.
- **Environmentally Friendly** – Does not produce halogenated byproducts.
- **Water Temperature Resilience** – Ions are not impacted by water temperature providing consistent residuals in hot water systems.
- **System Redundancy** – Backup electrode cell is available if the primary cell is being repaired or under maintenance.
- **Infrastructure Friendly** – Less corrosive to copper plumbing systems compared to traditional halogen disinfectants.
- **Online Monitoring** – Real-time monitoring and control to ensure optimal performance.
- **Chemical Handling** – No spill concerns versus liquid chemicals.
- **Cost Effective** – Unit only activates when fresh makeup water enters the system.



System Components

Controller

EPI System controller is designed to deliver consistent copper and silver ions. The intuitive software is easy to use and can be integrated with Building Management Systems (BMS).

Electrode Cells

The electrode cell body is machined from a solid core of aluminum that is coated with blue Corvel ECA 1626 epoxy and 316 stainless-steel flanges, meeting NSF/ANSI 61.

Ultrasonic Flow Meters

As fresh makeup water enters the system, flow meters activate the controller generating copper and silver ions.

Remote Monitoring

Remote monitoring allows system adjustments and data trending.

