

# HALOX TECHNICAL DATA SHEET

## Treatment of Hot and Cold Water Systems to Control Legionella

	Copper/Silver	Chlorine	High Hot Water Temp 140 °F (60 °C)	Chlorine Dioxide
<b>Legionella</b>	Rated ineffective by BSRIA for hard water applications. Good in soft water if recommended pH and solids level is maintained. Rated ineffective for biofilm.	Good for Legionella. Rated fair to poor for control of biofilm. Legionella is thought to hide out in biofilm.	Rated ineffective by BSRIA for outlets and storage tanks. BSRIA study found: cold water system can be Legionella infection source for hot water systems.	Rated good by UK Health, Safety Executive and BSRIA for all applications. Rated good for biofilm control. Biofilm is considered a leading culprit in Legionella growth.
<b>Taste and Odor</b>	No Impact.	Can cause taste and odor problems.	No Impact.	Removes most taste and odor problems
<b>Impact on Equipment</b>	Concerns with copper deposition on mild steel that can cause localized corrosion.	Very high ORP and use results in potential corrosion. Vapors from Chlorine in feed area can cause corrosion as well.	Higher temperatures will impact corrosion, life of seals, heat exchangers, pumps etc. Higher temperatures will significantly impact fuel costs.	Lowest ORP of oxidizers. Low use and low ORP results in insignificant impact to corrosivity
<b>Environment and Health</b>	Copper is acutely toxic to many aquatic species at levels as low as 50 ppb. Not EPA approved as primary potable water disinfectant.	Can produce carcinogenic THMs. Chlorine produces strong corrosive and hazardous vapors. Slight excess feed can cause chlorine odors in water.	High temperatures, above 140 °F (60 °C), can cause scalding.	Does not produce THMs and can destroy some THMs. Sodium Chlorite does not produce vapors.
<b>Simplicity and Reliability</b>	Potentially many difficult to control variables include pH, hardness TDS, acid, filters, softeners, and scale. Field testing of Cu and Ag residuals in the ppb range is difficult.	Pumps frequently need priming and maintenance due to vapor binding and corrosiveness of chlorine.	High temperatures increase the potential for equipment failures and maintenance.  The potential for problems increases if extra equipment such as temperature control valves is added.	The Halox System is very simple to control.  Testing of free Chlorine Dioxide is simple and reliable  Product can also be fed automatically by ORP control.

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