

# HEATING/COOLING SYSTEM WATER TREATMENT (H/CS)

## BACTERIAL CONTROL TREATMENT

### Heating/Cooling System Water Treatment (H/CS):

- Efficiently **biodegrades** organic matter necessary for bacterial growth into CO<sub>2</sub> and water, notably targeting IRB (Iron Related Bacteria) and Legionella pneumophila (Legionnaire's Disease). Remarkably, H/CS operates without any biocides.
- **Designed for longevity**, with an expected lifespan of 15+ years in both new and refurbished systems.
- **Successfully dissolves** calcium/magnesium deposits across the system.
- **Actively cleans and lubricates** components like lines, sensors, gauges, traps, valves, and reservoirs.
- Boasts **All-SAFE** enzymatic functionality within a water/propylene glycol mix ranging from -60°C to 100°C.
- Recommended treatment ratio stands at **25:1 (40 ml/litre)**.

### Efficacy of H/CS:

H/CS adeptly speeds up the breakdown of essential bacterial growth solids such as IRB, transforming them into CO<sub>2</sub>, water, and minimal biomass without depleting its potency. H/CS has demonstrated its capacity to swiftly biodegrade elements that sustain bacterial growth, such as hydrocarbons and various mineral compounds.

### Safety and Environmental Impact:

H/CS champions All-SAFE standards, ensuring zero harm to humans, animals, or the environment, owing to its inherently safe and self-renewing biochemistry, which is wholly Non-Toxic. Ecotoxicity Classification has labeled it as "Absolutely Non-Toxic to Wastewater Treatment Plant bacteria".

### Understanding IRB:

Iron-related bacteria (IRB) are prevalent in circulating water systems, and they can exist in both aerobic (requiring oxygen) and anaerobic (thriving without oxygen) environments. While IRB generally lean toward oxygenated environments, they can subsist in water with barely any oxygen presence. Furthermore, IRB can flourish across varied conditions, be it temperatures, pH levels, or light exposures.

### Addressing Odor & Gases:

Anaerobic bacteria in liquid systems can emit pungent gases. Methane, though odorless, is combustible. Carbon dioxide, another odorless gas, can create environments that suppress aerobic bacteria, allowing anaerobic ones to dominate. Using H/CS in a specific blend within the heating/cooling system effectively manages these issues.

Combatting Legionella: Legionella pneumophila, often present in heating/cooling systems, leads to Legionnaire's Disease, which has a significant fatality rate. H/CS proactively averts Legionella proliferation by eradicating its nutritional sources and obstructing the growth of related microorganisms.

### Optimizing H/CS Operation:

For peak results with H/CS, the blend of H/CS and water/propylene glycol should be circulated, ensuring swift and complete biodegradation of target components. For older systems laden with deposits and obstructions, a pretreatment may be necessary, followed by a thorough flush and re-treatment for sustainable operations.

### Disposal:

Any dissolved liquids from the system are environmentally safe for sewer disposal, and any solid waste can be directed to standard landfill disposal.

Have questions? Reach us at: [www.lubecorp.com](http://www.lubecorp.com)

