

## **Short Introduction to**



**Summary:** ElectroLIFE is engineered for HVAC and Hydrothermal manufacturing equipment as an automated maintenance device eliminating scale, neutralizing microbial loading, stabilizing performance and saving energy utilizing only dual polarity electrochemistry.

**Statement of the problem:** HVAC and Hydrothermal equipment in general are dependent on the quality of the water they are supplied with. There is no water on earth engineered for hydrothermal processing, this is why additives are used. Additives do not work as they should as they are engineered in labs under perfect conditions and specific water types. These conditions and water types do not exist in the field, and worse yet change from facility to facility even in the same geographical area. None of this is new information to anyone interested in this subject, so what is the answer?

What is the answer?: There are a variety of methods to solve water borne problems. One thing they all have in common is they do not actually solve them. The USA is behind in industrial water treatment technologies, specifically Japanese advanced high amp dual polarity electrochemistry.

Performance standards, industrial scaling, evolving advancements, and developing new areas has been in continuous evolution for decades. There is not a category of water that is out of scope for this industrial equipment.

Understanding water is controlled by dual polarity electrical influence makes controlling water very simple, all you need is dual polarity, right? Well, its not that easy, luckily for us ElectroLIFE is already engineered to perfection, and today we can simply apply it.

To understand the answer is to understand water. How to get this unique medium to work for you. Mother nature has no problem getting water to do what it requires, there is a clue here on what water requires. Water requires energy, in our context applied polarity, both negative and positive. The mechanical equipment also requires energy a positive polarity, in this case the water has a negative polarity, we simply restructure the water to positive polarity and now the water is compatible with the equipment, they work together in harmony. Its simple, just not so simple to do.

To apply electrical energy in a programed controlled chamber, you're talking to water, you are giving water the instructions on what you require from it in a way it understands., in this case we would like it to be a positive influence and quit being a negative one, pun intended.



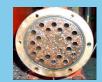












## Old Problems vs New Solutions

**Scale:** To some the number one complaint overall. This problem is solved easily, scale is caused by a negative dominance on the scale *(basics)* of the source water reacting with the positive static dominance of the equipment. You can not change the static charge on the equipment, but you can change the dominant charge on the basics in the water. Changing the waters dominant charge to positive match's the static charge of the equipment eliminating scale from forming as two like polarities can not combine, they repel. If a scale inhibitor is used, ElectroLIFE will enhance the performance of the treatment as the treatment is attempting to do the same thing although through chemical reaction. The positive dominance will be a compatible environment for the treatment's performance and stabilization as it will be with out inhabitation by the basics *(scale)* in the water already controlled in positive dominance. They are free to concentrate on makeup waters new contaminants.

*Microbial Loading*: This is a simple extension of positive polarity. Neutralizing organics and sanitizers all release their gases in the positive range, below 7pH. ElectroLIFE maintains a neutral compatibility to synthetic pesticide stability eliminating inhibitors to treatments used. Furthermore, the process creates dissolved reactive oxygen species which aid in the total loading of the entire system as an additional preventative control. This is very important as we constantly hear about Legionella outbreaks. Legionella can not hide in a structure free environment saturated with dissolved ROS, this is not hard to understand.

Few people understand, it does not have to be a commercial HVAC system to have waterborne pathogens, its more likely a personal AC or water system never maintained correctly to cause an infection, just not an "outbreak".

**Process Temperature Stabilization:** When you have scale and microbial loading you sacrifice stabilization and performance, we all know this. To optimize the two above support stabilization. In addition, ElectroLIFE increases the potential of the source water allowing for an increase in Ionic Product to 6.45, structure free, maximizing molecule surface area therefore stabilizing exchange regardless of operational temperatures.

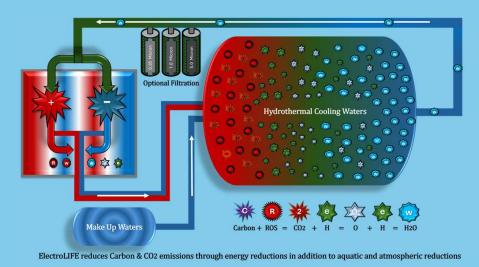
*Water Savings*: Adding to the three above, eliminating scale reduces splash by, eliminating microbial loading eliminates water channeling out of the equipment, adding the increased ionic product to structure free exchanges heat faster and cools more quickly reducing evaporation. All combined along with reduced bleed off waters create a substantial water savings. Wash out waters from this system are recyclable back into the system when desired or required.

Carbon /  $CO_2$  Emissions Reductions: ElectroLIFE as a continuous circulation system reduces energy consumption by an average of 25%, in addition the process of oxidation followed by reduction eliminates atmospheric and aquatic carbon by oxidizing carbon to  $CO_2$ , then the  $CO_2$  is reduced back to Oxygen on its ultimate path back to  $H_2O$ .

*In Conclusion:* We can not fix the problems of yesterday using the same methods of today. We must look to a different answer and think about the problem from a different point of view.

ElectroLIFE has proven this change in thought and understanding for decades in some of the worlds most recognized manufacturing facilities and government entities. This technology has been commercialized and scaled to the largest of required volumes.

Today the ElectroLIFE Technology is available in the USA. The operations who are having trouble with their systems and are looking for a refreshing new understanding of how to concur this madness, your day and system has arrived.



NaOC Positive Dominance
6.8 Polarity Offset
Stabilized - Dissolved - Stored
Multi Species Gases

NaOC ~ 03 NaOC ~ Cl2 NaOC ~ H2O2

NaOC ~ Hydrogen NaOC ~ NaOH-

