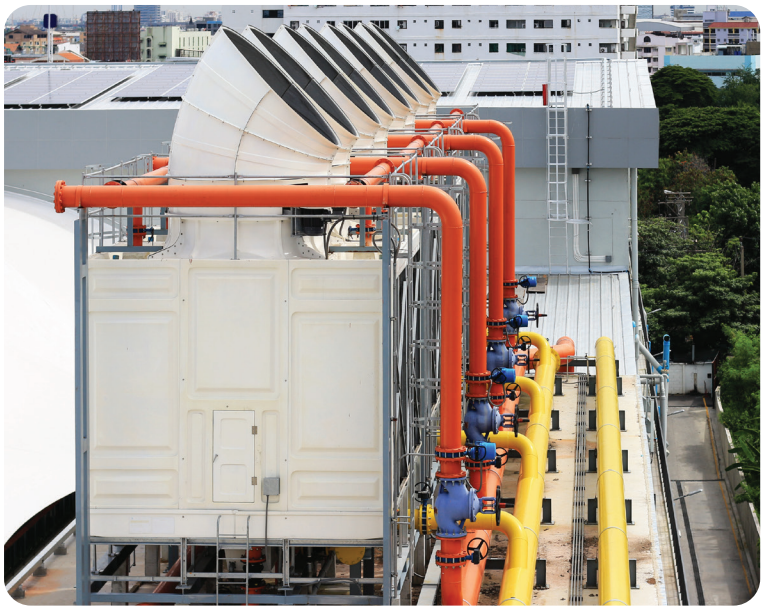
AQUAMETRICS
ENVIRONMENTAL

Master Distributor Watch Water® Products



COOLING TOWER OPERATIONS

An Environmentally Green, Sustainable, Cost-Efficient Answer to Cooling Tower Operations

In the U.S. and Canada, Aquametrics Environmental (AE), a Master Distributor of Watch Water®, is now offering a combination of environmentally green resins, filtration media, and chemically-produced, advanced oxidation scale and corrosion inhibitors, biodegradable oxidizing and non-oxidizing biocides, and a revolutionary water softener alternative. With AE, cooling tower operators will provide significant cost, water, and power savings, while increasing environmental sustainability.

Costs Are Reduced

- Reusable resins and filtration medias*
- Minimal electrical usage, including reduced tower electric demand
- Virtual elimination of water discharge costs
- Scale control without softening water – no sodium added and no loss of water from backwashing
- Virtually no maintenance and repair
- All our materials are in dry, granular form and non-toxic -storage, handling, disposal, and insurance costs are reduced accordingly
- Consistently effective cooling tower equipment with longer operational life
- Easy to start up and stop, technologies are installed in a few days

*Select medias: 7-10 years without loss of effectiveness

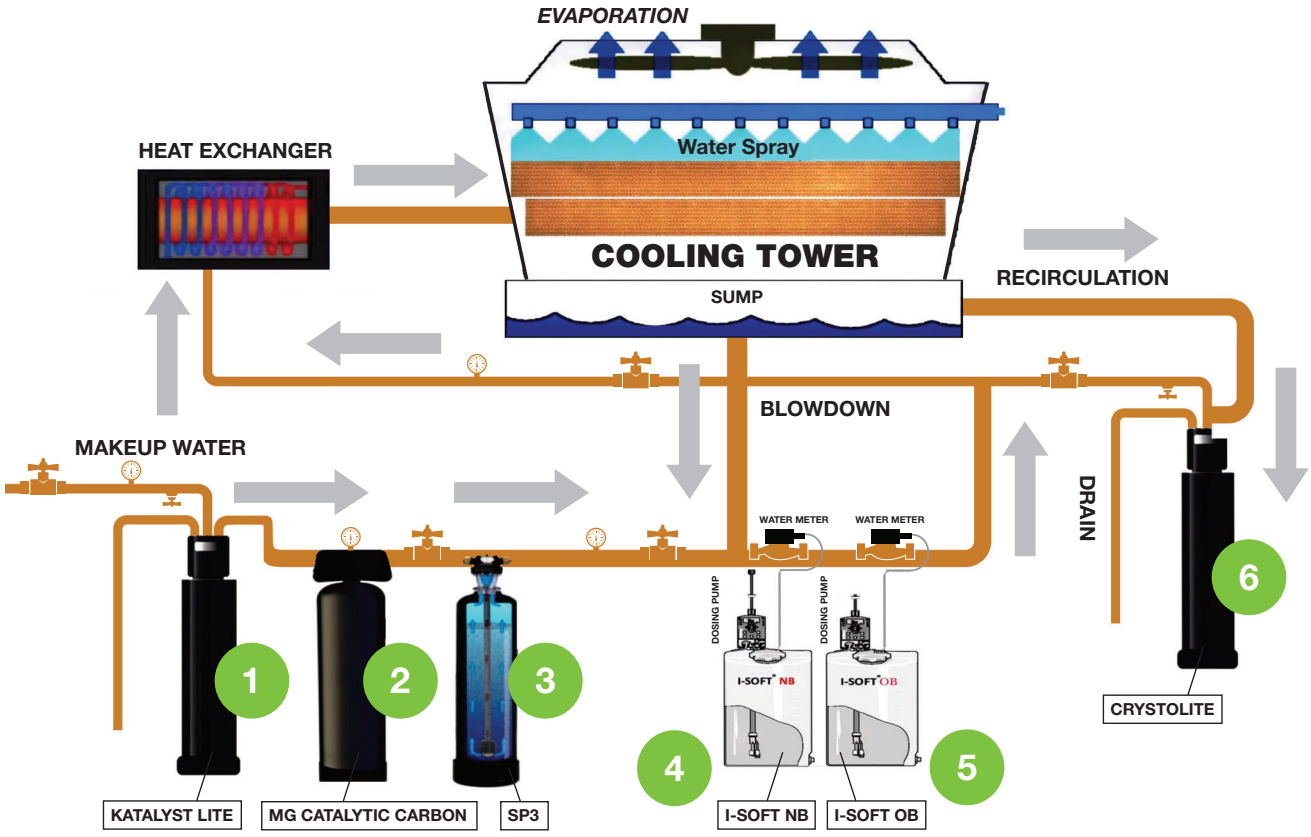
Operation Benefits

- Virtual elimination of existing cation and anion scale, stopping the formation of new scale, corrosion, biofilm, and other microorganisms including yeast and Legionella
- Significant water savings with an increase in Cycles of Concentration (COC) and reduced blowdown. COC are increased without amplifying the potential for scale and corrosion
- Elimination of toxic discharge in blowdown
- Reduction in cooling tower maintenance, power usage, and operational power costs

Limited Capital Cost

With limited operating equipment required, such as dosing pumps and vessels for retention of resins, filtration media, and advanced oxidation media, all AE operational involve limited capital expenditure.

HOW OUR TREATMENT IS ACCOMPLISHED



1 Katalyst Light

Katalyst Light filters the following constituents to less than 3 microns: suspended solids, sediment, turbidity, organics, color, and odor. Removes iron, manganese, hydrogen sulfide, arsenic, radium, heavy metals, and radionnuclides. Additional advantages include media replacement every 7-10 years, no disinfection by-products, and no mandatory KMnO4, chloring, or chlorine dioxide dosing.

2 Catalytic Carbon MG

Catalytic Carbon MG is an absorbent with a positive impact on cooling tower efficiency and the health of people. Benefits include:

- Removal of: suspended solids to 1 micron or less including humic substances, tannins and lignin, hydrogen sulfide, chloramines, trihalomethanes, phenols, heavy metals, including arsenate, arsenide, chromium, Copper C, fluoride, lead, mercury and selenium; and

- Removal and destruction of Per Fluorinated Compounds (PFCs), a new class of persistent organic pollutants. Per-and Polyfluoroalkyl Substances (PFASs) are recalcitrant compounds that can cause adverse health through bioaccumulation.

When necessary to regenerate and de-adsorb the carbon, we apply our proprietary SuperOxy (SO), produced of Titanium dioxide powder mixed with Oxydes-P. SuperOxy destroys these forever chemicals by reduction to carbon dioxide, water, and fluoride.

3 SP3/CT

SP3/CT – the embodiment of recent technology called Nucleation Assisted Crystallization (NAC). This unique product transforms Calcium and Magnesium hardness into non-soluble micro-crystals – they will not form scale. Importantly, unlike conventional softeners, FILTERSORB® SP3 doesn't add sodium to the water, thus having virtually no impact on COC.

4 I-Soft NB

I-Soft NB – a multi-functional scale and corrosion inhibitor, with dispersant and non-oxidizing biocide, for high silica and sulphate content in feed water. A complexing agent against permanent water hardness – not just cations but ALL SALTS!

5 I-Soft OB

I-Soft OB – the most effective, non-hazardous oxidizing biocide in the market, virtually eliminating biofilm and scale formation.

6 Crystolite

Crystolite – provides a microfiltration effect in a pressure vessel, allowing water to flow through the top distributor on the top of media layer, where suspended solids are held on the highest surface area allowing only clean water to flow through the Crystolite media. As a result, Crystolite can be used to filter down to 0.5 microns without clogging. It allows all suspended solids to accumulate on the surface of the Crystolite easily backwashing into a drain, when needed.

Environmental Sustainability

- No toxic chemicals or byproducts produced
- Advanced oxidation destroys all contaminants - not separated and concentrated
- No toxic chemicals when blowdown discharge is required – BOD /COD are sent to wastewater treatment systems
- Virtually no electrical power

Instant Dosing Advantages

What differentiates our Instant Dosing Technology from other products is 95% less water usage and lower costs! Why? Our Instant Dosing chemicals are delivered as dry materials, introduced through a dosing pump and then on specific demand, resulting in the following benefits:

- Correct dosing/continuous operation
- Controlled concentration of products
- No service or maintenance costs
- Reduced operation and handling cost
- Lower CO2 emissions
- Personnel handling safety
- I-Soft does not include Phosphates, EDTA, NTA, Phosphonates or complexing agents which are not biodegradable
- I-Soft formulations are resistant to being broken down in the pH range between 2 and 14, even at elevated temperatures

Contaminant Destruction

Watch Water® contaminant destruction is principally accomplished with Hydroxyl Radicals (OH), one of the strongest oxidants (biocide) that is available for water treatment. They are extremely reactive and vigorously degrades any available organic or inorganic molecules and microorganisms. Their radical reactions are extremely fast, having a rate constant ranging between 10^7 to 10^9 M^{-1} sec^{-1}. They then dissipate quickly and will not be found in the makeup water, leaving it will be crystal clear. Contaminants are destroyed and not separated or concentrated.

"Blowdown" Or "Bleed Off"

With AE the need for blowdown is greatly reduced because elements causing scale and corrosion have been removed. Importantly, makeup water will be used primarily for evaporation and not for maintaining acceptable levels of TDS, thereby making the cooling tower blowdown almost zero. Ultimately, blowdown water must subsequently be discharged to a local wastewater treatment facility or discharged onsite. The blowdown will not contain organic materials nor phosphates, phosphonates, or chelates like EDTA or NTA materials.

Note: nowhere in AEI treatment are Phosphates, Phosphonates, EDTA, NTA or complexing agents used – in fact, only biodegradable products are used.

Product Manufacturer

Watch Water® (www.watchwater.de), headquartered in Mannheim, Germany, is one of the fastest growing companies in manufacturing scale prevention, adsorbers, filter media, and instant dosing solutions for water and wastewater treatment industries. Watch Water® has more than 45 branches and distributors working around the world.

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