

## Non-Chemical Water Treatment Devices

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Once again Non-chemical Water Treatment Devices are making a resurgence in many areas. These devices are mainly classified as magnetic water treatment devices, electrostatic water treatment units and electrostatic/ultrasonic systems. These types of devices have been around for many years. Basic patents go as far back as 30 to 50 years ago. The only difference between those devices and the ones being sold today are a change in name and a better marketing program.

The reasons for their resurgence can be attributed to their claims which are based on the fears of modern chemical treatment. Conventional methods of treating boilers and cooling towers seem to be too complicated, expensive and time consuming to the general consumer. Standard claims made by the manufacturers of these devices are as follows:

- No use of any chemical
- No scaling
- Minimal or no corrosion
- Removal of existing scale
- No pollution from chemicals
- No power or minimal power requirements
- No bleed-off required
- Little or no technical control required
- No biofouling or biological buildup
- Reduces energy costs
- No maintenance
- Extends the life of equipment
- Inexpensive to install and fast payback

With these reported benefits, it is little wonder that these devices are able to find a place in today's market. When these claims are used with today's strong marketing approach one can see how these companies are able to gain the attention of prospective customers.

The big question is do these non-chemical treatment devices work? In general the answer is that these devices have been proven to be ineffective. At this time, none of the present devices have been proven effective in unbiased tests conducted by a qualified laboratory or research institute. The research provided by the suppliers of these devices is from a foreign source or from a source which has been paid

to confirm their claims. The majority of these suppliers use testimonial letters from users to support their claims. These letters make the device look too good to be true. Many times when these testimonials are checked, these companies and individuals who supported the devices claims are no longer around. In other situations, the devices are no longer being used. The testimonials given are for systems such as ice machines, swimming pools and fountains which have no relationship to the industrial application of boilers and cooling towers. Many of these testimonials are taken during the first months of operation when results seem to be adequate. The true test comes over a period of time.

The prospective customer faces a true dilemma. He is deluged with testimonials and so called research from the device suppliers. He is provided with contradictory research from the chemical treatment industry. Much of this information is of a very technical nature which is not easily understood by the general consumer. To simplify this problem for the general consumer, the following should be pointed out:

1. The devices operating on magnetic and electrostatic principals all make claims in direct conflict with laws of thermodynamics which require the expenditure of energy to accomplish changes.
2. Many of these devices claim to create their own energy which would be a major scientific break through if true. This also goes against basic scientific laws.
3. Scale formation is governed by the ion concentration and temperature in water systems. These parameters are not altered with exposure to electrostatic or magnetic force fields.
4. Claims that these devices prevent algae and bacteria are false and could be actually dangerous if followed. No written proof of this claim has been made available.
5. Claims of corrosion control are not backed by scientific facts. In fact most technical literature provided by these device suppliers downplay this concern and focus on scale control.

6. The claims made by these devices cannot be detected or measured by standard water testing.

The prospective buyers of these types of devices should be made aware that several investigations by the Attorney Generals offices in Illinois, South Dakota, Texas and Missouri have taken place and have found these units to be ineffective. The National Association of Corrosion Engineers has issued a warning to consumers to look out for ineffective devices and their exaggerated claims. The Water Quality Association has approved a policy prohibiting the display or exhibition of these devices at their annual trade show. Two main reasons were cited: Increasing concerns over the rapid rise in Federal and State law enforcement activity involving water treatment devices of all types and a lack of recognized scientific or technical evidence proving the manufacturers claims. The University of Purdue School Of Engineering in a 1985 study, showed that none of the six permanent magnetic water conditioners tested provided any beneficial results.

As these devices become more popular, further regulation will hopefully come about. Until that time happens, it will be difficult to deter prospective consumers from purchasing these devices. All we can do is provide the prospective buyers with the most up-to-date information available that discounts the exaggerated claims of these manufacturers of these devices.

## TRADE NAMES OF VARIOUS NON-CHEMICAL DEVICES

- Aqua Cells
- Aqua Dyne
- Aqua Flow
- Aqua Magnetics
- Aqua Scrubber
- Aqua Stat
- Aqua-Corr Water Conditioner
- Aquatrol
- Aquatron
- Aquatronic
- Ashbrook Water Stabilizing System
- Bon Aqua
- Butler Electronic De-Scaler
- Care Free Conditioner
- Colloid-o-Tron
- Corrotrol
- Descal-a-Matic
- EIBL Water Conditioner
- Electro-mag
- Electronic Water Treatment Company
- Electrostatic Water Treater
- Electrotreat
- Elm Fluid Modifier
- Enter-tec Inc.
- Hako Water Conditional
- Hydro-Tron
- Kentech
- Linear Kinetic Cell
- Nucleator
- Packard Water Conditioner
- Polar Water Conditioner
- Progressive Electronic Water Treater
- Rotomag Electromagnetic Water
- Scale Eliminator
- Scale Free Systems
- Scalemaster
- Sentry Electro-Magnetic Treatment
- Sullelectron
- Super Ion Water Conditioner
- Superior Water Conditioner
- Tarn Pure
- The Ion Stick
- The Purifier
- Turbomag
- Ultrastat
- Wateco Electrostatic Descaler
- Water Wizard