

# Zeta Rod<sup>®</sup> Systems

*State-of-the art electronic water treatment technology-  
Offering green solutions for a world where every drop counts*



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U.S.A.

# *Zeta Rod: the world's most efficient method for the prevention of fouling in water systems*

Zeta Rod systems have successfully improved water and energy conservation, optimized performance of industrial fluids, and prevented scale and biological fouling in water systems.

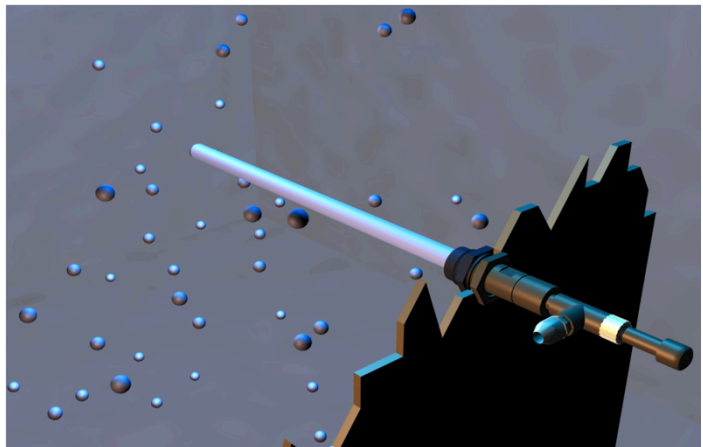
Originally developed for process protection in mining, pulp and paper, and beverage bottling, the Zeta Rod's use as an important **green technology** was expanded to reduce or eliminate chemical usage in heavy air conditioning, prevent fouling of reverse osmosis membranes, provide a means to achieve significant water conservation in HVAC and process water, and to protect drinking water systems for airports and municipalities.

Biological control for agriculture and food production qualifies the Zeta Rod as an effective tool in food safety and productivity.

Zeta Rod **patented capacitor-based technology** harnesses the effects of high potential electrostatic fields to disperse bacteria and mineral colloids in fluids, eliminating biofouling and preventing scale and corrosion without the use of additive chemicals. Because it does not add anything to the water, or remove anything from the water, it functions independently of process requirements.

Colloids in water systems become components of the capacitor and receive a strong boost to their natural surface charge, altering double-layer conditions that govern particle interactions.

Bacteria are unable to attach, absorb nutrition, or replicate into colonies. Existing biofilm hydrates excessively, loses bonding strength and disperses. Biofilm, bio-corrosion, and scale formation are arrested.



Zeta Rod systems are currently at work protecting industrial cooling, reverse osmosis membranes, flocculation processes, glass manufacturing shear lubricants, metal working fluids and water distribution piping.

Zeta Corporation provides water and fluid treatment solutions where environmental protections and bottom line results are not mutually exclusive.

# Markets & Applications:

## Water Supply/ Waste Water Treatment

Solid/Liquid Separation  
Biofilm Mitigation



## Process / Manufacturing

Reverse Osmosis  
Process Side Anti-Fouling  
Process Boilers & Cooling  
Heat Exchangers  
Parts Washers  
Cutting Fluids  
Food & Beverage  
Processing  
Multi-Effect Evaporators



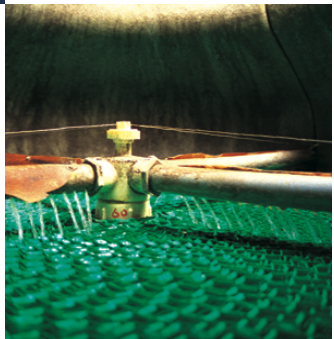
## Mining

Acid Mine Drainage  
Solvent Extraction  
Heap Leach and  
Recovery



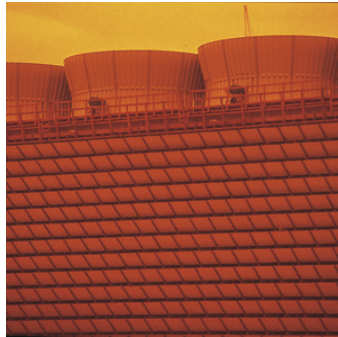
## Commercial/ Industrial

Solid/Liquid Separation  
Biofilm Mitigation  
HVACR



## Agriculture

Drip Irrigation  
Micro-Spray Irrigation  
Fruit & Vegetable Pre-Cooling  
Ice Making  
Soil Wetting  
Vacuum Cooling  
Refrigeration Warehouse  
Cooling



## Power / Utilities

Turbine Condensers  
Service Water  
Cooling Towers & Chillers

## Potable Water & Small Applications

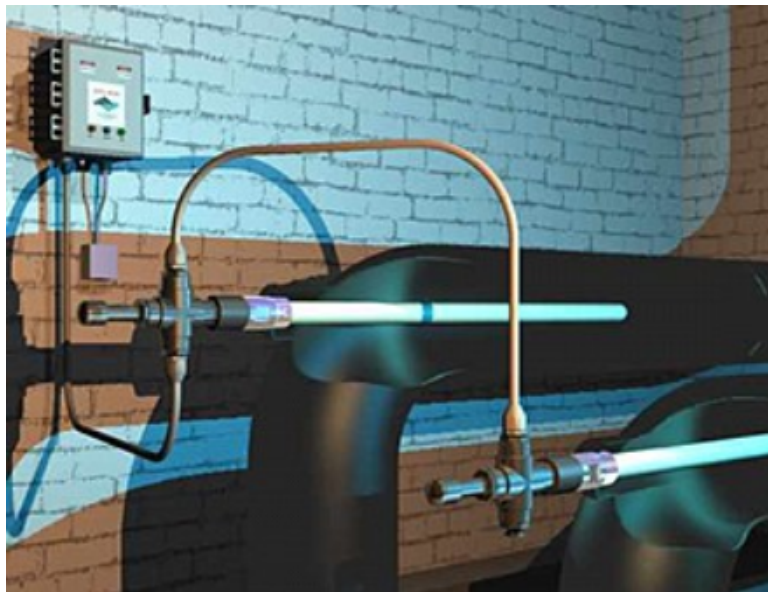
Domestic Water  
Conditioning  
Swimming Pools  
Water Features  
Irrigation





*Modular and infinitely scalable: Zeta Rod systems are the most versatile water treatment technology available.*

Zeta Rod systems have been adopted worldwide for both new construction and retrofit installations because they are easily combined and configured for a wide range of applications and project sizes. **Modular in design**, a Zeta Rod system allows for multiple rods of selected sizes to be inserted where needed, powered by one or more universal input, energy efficient power supplies to provide the optimal treatment for any application, from the largest central cooling plant to the smallest water flows.





## ZETA WATER MANAGEMENT SYSTEMS

### *Enhanced Water Conservation & Water Re-use Opportunities for Open Loop HVAC*

Zeta Rod® Water Management Systems combine patented electronic water treatment technology with water management protocols developed to offer continuous remote monitoring of open loop evaporative cooling systems for optimizing **water conservation** and reduction of chemistry, while protecting equipment from corrosion, scale, bio-fouling, and bio-corrosion. Zeta Corporation developed and demonstrated the water management program under a Cooperative Research and Development Agreement with the U.S. Army Corps of Engineers Research Lab. The two-year study, published in 2009, monitored side-by-side installations of the technology, operating without any chemicals, against the results of a standard chemical water treatment program on sites chosen at Federal facilities in the desert Southwest. Results showed an average of **20% reduction in make-up water usage and 50% reduction in blow-down**, while meeting and exceeding criteria for protection of equipment from scale, corrosion and bio-fouling. Zeta Water Management programs contribute to LEED strategies for earning points under Water Efficiency and Innovation in Design.

#### *Water conservation and chemistry reduction*

When operated without chemical additives (normal condition) the Zeta Water Management System is designed to meet the primary objective of equipment protection, while offering opportunities for **increased water conservation beyond what is capable of being delivered by chemical treatment alone**. This is accomplished because the technology allows systems to safely run at increased cycles of concentration under conditions that would normally be indicative of scaling potential. Additionally, operation at elevated pH sets conditions for low corrosion potential and the unique ability of the technology to prevent formation of biofilms inhibits bio-fouling and associated microbial induced corrosion.

#### *Continuous Remote Monitoring*

The primary objective of any water treatment program is to protect expensive condensers and cooling towers while operating in an efficient manner. Variances in make-up water quality and lack of access or expertise can contribute to inefficiencies and risk to equipment and operators. Zeta Corporation offers monitoring services and remote operational protocols that allow for continuous 24/7 monitoring and control of systems for key metrics. This assures owners that adverse condition alarms are identified and addressed before they become critical issues. Documentation of actual water usage, based on remote metering of make-up and blow-down ratios, combined with analysis and reporting of data log readings and water sample testing comprise the basis for monitoring programs available.

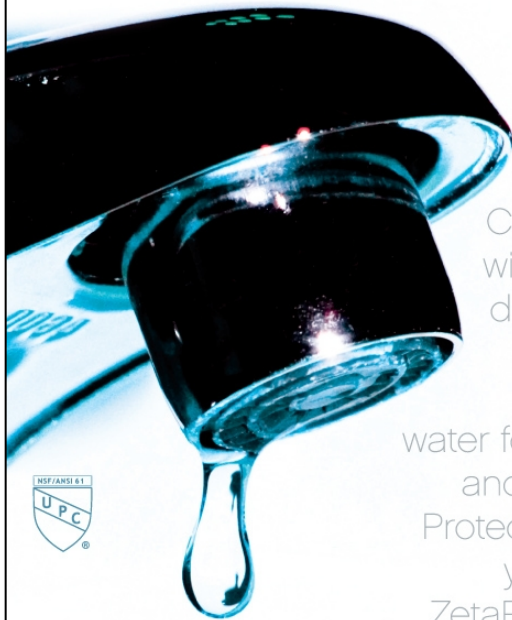
## *Out of the box: integrated systems for residential & commercial water treatment*

Zeta systems single rod systems for residential and commercial water treatment are preconfigured as a kit and designed for small applications such as domestic water piping, swimming pools and water features as an adjunct or alternative to filtration or chemical water softening.

 ZetaRod®



Ecological water  
treatment technology.  
**Defined.**



**NO SALT. NO WASTE.  
NO MAINTENANCE.**

Condition your water electronically without salt and prevent scale and damaging deposits to ALL of your fixtures from kitchen to bath.

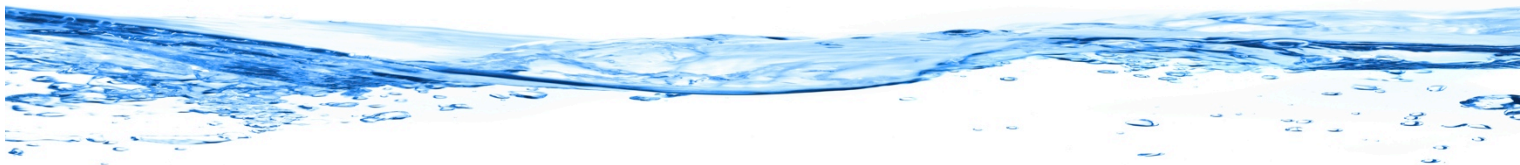
Provide your family with treated water for EVERY use in your home, pool and garden, without wasting a drop. Protect the investment you've made in your home...with the one and only ZetaRod® patented green technology. Available through professional plumbers.



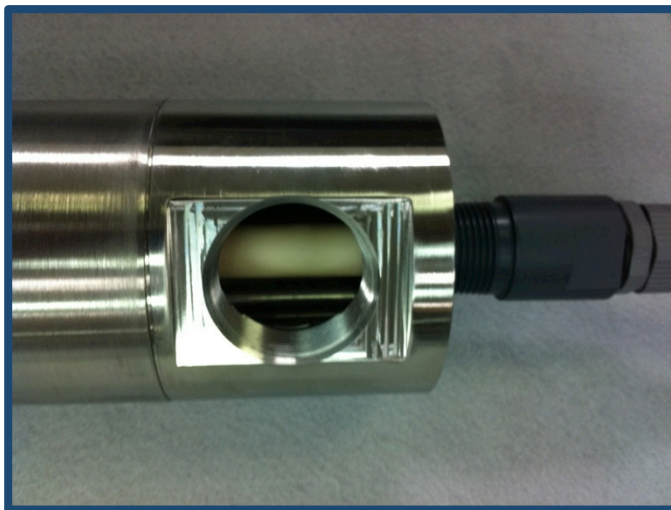
**ZETA CORPORATION®**

[www.zetarod.com](http://www.zetarod.com)





*Zeta Rod systems for residential & small commercial applications:  
Custom chambers allow for installation into small piping*









# ZETA ROD SYSTEM CERTIFICATIONS



ETL Listed – File 9800227  
Conforms to UL STD 61010-1  
Certified to CAN/CSA STD C22.2#61010-1

Industrial Control Equipment for Hazardous  
Locations  
Conforms to UL STD 698 (by special configuration)



IAPMO Listed – File 4890 & N-4890  
Manufactured in compliance with NSF/ANSI 61-2009,  
IGC 91-2009 and NSF50  
Products comply with the applicable sections of the  
Uniform Plumbing Code and the Green Plumbing and  
Mechanical Code Supplement.



IAPMO Listed – File 7124  
Complies with California Lead Plumbing Law



EC Declaration of Conformity  
EN 50081-2, EN 50082-2, and EN 601010-1  
Following the provision of Directives:  
Low Voltage Directive 73/23/EEC – European Union  
(EU)  
and EMC Directive 89/336/EEC – European Union  
(EU)



Made in the USA. U.S. Patent Number 5591317  
Other US and international patents granted or  
pending.

*Global Reach: Zeta Rod systems have been adopted worldwide as the technology of choice for process and comfort cooling, reverse osmosis membrane fouling prevention, beverage and bottling processes, potable & waste- water treatment, metalworking fluids and others.*



## *Partial Client & Application List:*

CLIENT	LOCATION	APPLICATION
Rexam Beverage Can Americas	16 U.S. Plants	Can Washers, Cooling Towers
REXAM EUROPE	22 Plants Europe and Russia	Can Washers, Cooling Towers
Crown Cork & Seal	Spain & Turkey	Can Washers, Waste Water
Can Pack	Poland	Can Washers
General Motors	Michigan & NY, USA Plants	Metalworking Fluids, Parts Washers
FAG Bearings	Ontario, Canada	Metalworking Fluids
Federal Mogul	Indiana, USA	Parts Washers
Federal Mogul	United Kingdom	Metalworking Fluids
Bell Helicopter	Texas, USA	Metalworking Fluids
BF Goodrich Landing Gear	Tennessee, USA	Metalworking Fluids
Tubacex	Spain	Metalworking Fluids
Mark One Corp	USA - OEM	Metalworking Fluids
Nan Ya Plastics	Taiwan	Cooling Towers
Formosa Plastics	Texas, USA	Evaporators
Dyamo	Czech Republic	Evaporators
Nervacero Steel	Bilbao, Spain	Cooling Towers, legionella control
Carton St. Laurent	Canada	Paper Machines
Wafer Tech	Washington, USA	Cooling Towers /Chillers
Warner Robins Air Force Base	Georgia, USA	Cooling Tower Water Management
Davis Monthan Air Force Base	Arizona, USA	Cooling Tower Water Management
Fort Irwin U.S. Army Base	California, USA	Cooling Tower Water Management
Internal Revenue Data Center	Tennessee, USA	Cooling Tower Water Management
Fort Huachuca Army Base	Arizona, USA	Cooling Tower Water Management
Tinker Air Force Base	Oklahoma, USA	Waste Water treatment
City of Tucson Crime Lab	Arizona, USA	Cooling Tower Water Management
Los Angeles Convention Center	California, USA	Cooling Towers
10560 Wilshire Boulevard	California, USA	Cooling Tower
SB Lofts Luxury Condos	California, USA	Cooling Tower
Mill Valley Car Wash	California, USA	Car Wash Water Recycle
Picsweet	California, USA	Vegetable Processing
Frigorifico de Jalisco	Mexico	Evaporative Condenser
Congelados la Hacienda	Mexico	Evap. Condensers, Hydroponics
Spellman High Voltage	Mexico	Cooling Tower
Procter & Gamble	Mexico	Air Humidifiers
Lechera Guadalajara	Mexico	Boilers, Cooling Tower
Cubitos Polar	Mexico	Evaporative Condenser
Aceitera la Junta	Mexico	Cooling Tower
First Tennessee Bank Tower	Tennessee, USA	Cooling Tower
Cerveceria Cuauhtemoc	Mexico	Pasteurizer
Petrobras	Brazil	Waste Water Treatment
Honda	Japan	Process Cooling
Toyota	Japan	Process Cooling
Toombull Shopping Center	Australia	Cooling Tower
Kansas Board of Public Utilities	Kansas, USA	Reverse Osmosis
Suzuki Murati	India	Process Cooling
Kyger Creek Power Plant	Ohio, USA	Oil Coolers
Aspen Water	USA	OEM Mobile Reverse Osmosis
Carib Glassworks	Trinidad & Tobago	Glass Shear Spray Lubricant
Altajir Glass	Dubai, UAE	Glass Sheer Lubricant
Owens Illinois	Multiple Plants	Glass Sheer Lubricant
Boeing	Kansas, USA	Cooling Tower
Beverly Greenhouses	Canada	Hydroponic Irrigation