



THE ZETA ROD STRIKES DOWN THE SHIELD THAT PROTECTS LEGIONELLA BACTERIA

Zeta Corporation, a Tucson based company, has established that its patented product the Zeta Rod™ is another weapon in the battle against legionella. The Zeta Rod will remove and prevent recurrence of biofilm and scale that shelters legionella bacteria inside potable water systems and in cooling towers.

Legionella pneumophila bacteria, according to the Centers for Disease Control, are ubiquitous in nature but rarely present a problem to humans. The danger exists when humans inhale tiny droplets of water containing legionella. A healthy person should not be affected, but a chronically ill person or someone recovering from a severe illness or surgery is especially susceptible and much more likely to develop Legionaire's Disease.

A study was performed in which samples of water were obtained and cultured for the common forms of bacteria involved in biofilm development. Cultures were examined from the potable water systems at large commercial and industrial installations treated by the Zeta Rod, and were found to contain almost no biofilm forming bacteria. Adjacent buildings using the same water supply, but not treated by the Zeta Rod, exhibited continued clear evidence of biofilm forming bacteria. Since the Zeta Rod is not proven to have a biocidal effect, the difference in readings can be attributed to the respective presence or absence of biofilm in the piping systems.

Biofilm is a slick coating on wetted surfaces produced by many types of microbes. A thin layer of biofilm usually coats the interior of piping and other water handling equipment. This material provides both habitat and food supply for a range of bacteria, including the protozoa or amoeba that ingests and harbors the Legionella organism. Biofilm is highly resistant to cleansing by chemical and mechanical action. Biofilm durability is demonstrated by its resistance to penetration by biocides. Sheltered inside the biofilm, bacteria reproduce, protected from biocides such as chlorine or ozone. Areas of piping that have been treated to kill the bacterial population are often quickly reinfected by bacteria that have survived the treatment chemicals. Full sanitizing of water systems and equipment is virtually impossible without controlling the development of the host biofilm and scale.

The Zeta Rod is an electronic water treatment system that prevents microscopic particles from sticking together. When particles of mineral matter stick together the product is scale. When bacteria join together and multiply the product is slime or biofilm. When, due to the Zeta Rod system's effect, the deposits are no longer present, biocidal agents are able to attack directly and destroy the released harmful microbes. Protozoa containing legionella are known to live in, and take nutrition from, both scale and biofilm deposits. Legionella pneumophila bacteria are carried within protozoa as they are transported by aerosol droplets to human hosts. If the biofilm is no longer present, the protozoa can no longer survive; without them, the Legionella pneumophila bacteria are also no longer viable.

The Zeta Rod is the end result of the latest research to prevent fouling of industrial piping and heat exchangers. Applied to potable water it provides low cost, environmentally safe deposit control. The basic technology of the Zeta Rod has been used for over thirty years as an alternative to chemical additives. The new, high tech Zeta Rod electrode is able to serve as a booster to improve the efficiency of a number of disinfecting chemicals. The cleansing, dispersant action provided by the Zeta Rod thus provides synergistic support for the full range of biocidal treatments

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For more information contact: M. Michael Pitts Ph.D., President
E-mail: mmpitts@zetacorp.com

Electronic Deposit & Corrosion Control for Water Systems

2045 N. Forbes Blvd., Suite 102 • Tucson, Arizona 85745 • USA
520.903.9904 • 888.785.9660 • Fax : 520.903.9910 • e-mail : info@zetacorp.com • www.zetacorp.com