Bello Zon® Chlorine Dioxide Generation Systems

THE USE OF CHLORINE DIOXIDE FOR CONTROLLING LEGIONNAIRES DISEASE

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ABSTRACT

Minimizing the risk from Legionnaires Disease - a potentially fatal form of pneumonia - is becoming increasingly controlled by legislation as high profile outbreaks continue to occur throughout the world. Chlorine dioxide is recognized in the UK guidelines and in other studies as being an effective biocide against Legionella. The reasons for this are attributed to the importance that biofilms play in the growth of Legionella bacteria and the superior effectiveness of chlorine dioxide in the control of these biofilms.

7. CHLORINE DIOXIDE FOR CONTROL AND REMOVAL OF BIOFILMS

Following the discovery of the role biofilms play in the growth of Legionella bacteria, work has been carried out on the effectiveness of biocides against Legionella contained in biofilms. Not surprisingly it has been found that substantially longer contact times or much higher concentrations of biocide are required when compared to that needed to kill the planctonic bacteria in the water.

If this is the case it is reasonable to assume that biocides effective against biofilms will have better results at controlling Legionella in actual system waters. It is interesting to find therefore that there is considerable evidence that chlorine dioxide is particularly effective at removing and controlling biofilms.

8. SUMMARY

Evaluation of the effectiveness of biocides against Legionella bacteria in bulk system water will not provide adequate information on how they will perform in actual systems. It is the interaction with complex microbiological biofilms that is important in practice. It is likely therefore that chlorine dioxide is proving an effective biocide in cooling water systems, process systems and water services due to its superior activity against the biofilms that provide an environment where Legionella bacteria can thrive.