

## Cooling Towers & Closed Systems - Chlorine Dioxide

**Cooling Towers** - The use of chlorine dioxide (ClO<sub>2</sub>) in cooling towers, closed loops and cooling water systems can greatly assist in the control of Legionella bacteria (the causative organism for Legionnaires' disease), algae, planktonic and sessile bacteria, biofilm and scale. This highly effective disinfectant can help maintain legislative compliance and system safety; and the efficiency of heat exchanger surfaces, reservoir intakes and ancillary equipment.

All cooling water treatment programs, if they are to be completely effective must consider the following three components:

1. Microbiological control.
2. Scale and deposit control.
3. Corrosion control.



Traditional oxidizing agents such as chlorine and bromine suffer from pH constraints and corrosion problems which reduces their effectiveness. Chlorine dioxide however, is significantly more stable across a wider range of pH conditions than other oxidizing biocides; and it is compatible with most water treatment chemistry.

Globalex chlorine dioxide products help to control Legionella bacteria, algae, planktonic and sessile bacteria; and biofilm in cooling towers, closed loops and cooling water systems. In the UK, the Building Services Research and Information Association (BSRIA) has recommended chlorine dioxide as the best available technology for the control of Legionella bacteria in hot and cold water systems.

### Why is it important to control biofilm in such systems?

Biofilm creates an environment that helps to protect unwanted and harmful colonies of bacteria (including Legionella bacteria) making biological control significantly harder. Biofilm also acts as an insulator causing deterioration in general heat transfer properties. It creates fouling and corrosion problems by accumulating scale in pipework and equipment. Biofilm also creates an environment that promotes the growth of anaerobic microorganisms which in turn increases microbiologically induced corrosion (MIC) problems.

Globalex chlorine dioxide products offer a number of operational and cost saving benefits including:

- Highly effective against Legionella bacteria and stubborn biofilm.
- Excellent biological control.
- Savings on water and wastewater costs from reduced water consumption.
- Minimal salt build up; reducing potential corrosion problems.
- Reduced maintenance costs with longer operating cycles between "blow downs".
- Improved system performance with reduced accumulated scale on heat transfer surface components.

### Technical support and advice

Globalex closely with a diverse range of organizations; intelligently combining advanced treatment technologies with practical solutions to resolve complex issues. If you have a cooling tower or cooling system related project you would like to discuss with us, or require technical support and assistance; or if you simply have a question about one of our chlorine dioxide technologies please contact one of our specialist advisors .