

FlexPro® CL

Flexible Control, Exceptional Protection, Maximum Efficiency

FlexPro® CL is a breakthrough innovation in cooling water treatment specifically designed to work on a broad range of cooling systems. This truly green solution supports emerging regulations while outperforming other cooling water chemistries.

Why FlexPro® CL?

When the water treatment industry was encouraged to eliminate chromates over 35 years ago, phosphate-based treatment programs emerged as the technology of choice. Since that time, the industry has become increasingly aware of the challenges associated with phosphate-based technology:

- The precise control required to prevent phosphate deposits on hot bundles
- Limited admiralty brass corrosion control using only azoles
- Escalating dispersant demand due to phosphate precipitation with well water iron and aluminum carryover
- Increased chlorine demand due to algae growth on the towers

These complexities, along with emerging environmental restrictions on phosphorus discharge, prompted a multi-year research effort by ChemTreat to develop a product that alleviates these challenges. The result of this endeavor is FlexPro® CL: a versatile, phosphorus and zinc-free approach to cooling water treatment.*

- Proven effectiveness on an extremely broad range of water qualities and metal types
- Superior deposition and corrosion control by forming a persistent film across cooling system surfaces
- Exceptional fouling control resulting in significant reductions in biocide and chlorine usage
- Phosphorus-free* and Zinc-free product characteristics help to meet environmental regulations

*The FlexPro® CL corrosion inhibitor is phosphorus-free. Some FlexPro® CL products are designed to contain low levels of phosphorus.





Proven Results

High Iron in Well Water

Well water iron poses a special challenge for phosphate-based treatment programs. FlexPro® CL is particularly suited to such applications because the corrosion inhibitor does not react with the iron and the dispersant is only required to disperse the iron itself rather than precipitated iron phosphate. A Gulf Coast air separation plant with 2-5 ppm iron in its well water was experiencing heat exchanger fouling problems on a phosphate-based treatment program. The problems were severe enough to require shutdowns to clean the exchangers. Treatment was converted to FlexPro® CL with the addition of a non-phosphorus supplemental dispersant for iron. Results on both corrosion and fouling have improved substantially.

Gulf Coast Chemical Plant

FlexPro® CL was evaluated in the cooling tower at a Gulf Coast chemical plant operating at 9 cycles on clarified Sabine River water. The water is relatively corrosive and several high temperature heat exchangers have been prone to deposition over the years. Although the corrosion results were positive in the past, the plant wanted to use a more forgiving, non-fouling program. Corrosion coupon results with FlexPro® CL have been excellent, with steel coupons <1 mpy. Critical heat exchanger approach temperatures have remained flat. The FlexPro® CL chemistry not only continued the excellent corrosion results but virtually eliminated deposition and offered flexibility of control.

High Hardness, High Sulfate Corrosive Water Application

A Midwest cogeneration plant was faced with stringent phosphate discharge regulations. The unclarified makeup water was high in calcium and alkalinity, requiring sulfuric acid for pH control. The resulting cooling water was relatively corrosive due to high sulfates from the use of acid. Steel corrosion rates on the baseline low-phosphorus program were averaging about 10 mpy. Upon changing to the FlexPro® CL chemistry, corrosion rates have been reduced to 2 mpy average on steel and 0.1 - 0.2 mpy on copper.

Benefits of FlexPro® CL Technology

Increased Flexibility

- Effective on multiple metallurgies including steel, copper, and aluminum
- Green chemistry effective across a broad range of water hardness
- Reduced impact by well-water iron or aluminum carryover
- Rapid, accurate analysis using a handheld or online sensor

Maximum Protection

- Avoids Calcium Phosphate fouling in high temperature heat exchangers
- Controls deposition of Calcium Carbonate, Iron, and Manganese
- Lowers aquatic effects with a favorable EH&S profile
- DOT non-corrosive, safe handling, and shipping

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