

CASE STUDY

FlexGuard™ Helps Reduce Aluminum Corrosion in Multi-Metal Closed Loops

Background

A large packaging plant in the Mid-Atlantic region of the United States was struggling with corrosion in its closed loop system.

Having switched to a molybdate-free treatment program to comply with discharge permit requirements, plant personnel were unable to maintain

corrosion at the desired levels, especially in the aluminum system components. The severity of aluminum corrosion compromised the system, which would have cost approximately \$1.8M to replace.

The facility reached out to ChemTreat for a solution to help them manage corrosion without re-introducing molybdate into the system.

Solution

The ChemTreat team proposed FlexGuard™, our patent-pending organic acid-based closed loop corrosion solution. Designed specifically to address aluminum corrosion issues in closed loop systems, this technology does not contain nitrite or molybdate.

FlexGuard was fed into the plant's system at a dose of 5,000 ppm as product. This technology features fluorescent tracing, allowing the facility to track dosage with a hand-held PTSA meter for enhanced dosage monitoring.

Results

Thanks to FlexGuard, the packaging plant saw a significant improvement in corrosion. Aluminum corrosion rates decreased from >6 to 1 mpy.

Additionally, mild steel corrosion decreased from 1.0 to 0.1 mpy, and copper corrosion decreased from 0.1 to <0.1 mpy.

Before FlexGuard Trial

Aluminum



>6 mpy corrosion rate

Mild Steel



1.0 mpy corrosion rate

Copper



0.1 mpy corrosion rate

After FlexGuard Trial

Aluminum



1 mpy corrosion rate

Mild Steel



0.1 mpy corrosion rate

Copper



<0.1 mpy corrosion rate

FlexGuard helped the packaging plant significantly improve corrosion rates across their closed loop systems:

6x aluminum corrosion reduction

10x mild steel corrosion reduction

10x copper corrosion reduction

Pleased with the results, the plant continued treating their closed loops with FlexGuard after the trial ended.

Results are examples only. They are not guaranteed. Actual results may vary.