

Chiller Water Chemical Treatment

Closed systems usually contain a combination of different metals, which provide a high potential for galvanic corrosion. The potential for dissolved oxygen attach is generally quite low in closed systems because of small amount of makeup water the main oxygen source. However, in systems that require substantial makeup because of loss of water from leaks, oxygen is continually supplied and oxygen corrosion presents a serious problem. Oxygen can, at elevated temperatures or at point of high heat transfer, cause severe pitting corrosion.

Since relatively little makeup is added to most closed recirculating systems, it is practical and desirable to maintain the system in a corrosion –free condition. **This is normally achieved by applying Chemicals Treatment at rather high concentrations.**

Because water circulating through a closed system is not exposed to atmosphere, fouling by airborne silt and sand is rare. However, fouling by microbial masses may occur in closed systems where makeup rate is significant or process leaks encourage bacterial growths. **These are controlled with biological control agents formulated to be compatible with the Chemical Treatments and operating conditions found in closed systems.**

Scale should be a minor problem in a closed system since the water is not concentrated by evaporation. In a tightly closed system, none of the common scale-forming constituents deposit on metal surfaces to interfere with heat transfer or encourage corrosion.

With high make up rates, however, additional scale forms with each new increment of water added so that in time, scale becomes significant. In addition, there is opportunity for sludge, rust, and suspended solids to drop out at low flow points and bake on heat transfer surfaces to form a hard deposit. **Therefore, scale retardants and dispersants are usually included as part of closed system Chemical Treatment program where makeup rates are high.** Often soft water or condensate is used for make to closed systems depending on the characteristics of the system being protected.

For a successful Chiller Water Treatment, it is requires regular analysis for control of correct Treatment Chemical Residuals.