



Closed Loop Systems are designed to supply either hot or chilled water to a heat exchanger, and then return the water to the point of origin to repeat the process. Regardless of how the system is designed, the following characteristics apply. Because it is a Closed Loop, no or only minimal losses are expected as there is no evaporation occurring.

Corrosion is the most common problem in closed loops, even though scaling can be a problem in very high temperature water. The effects of corrosion will be higher as the temperature of the water increases, which means more treatment chemicals will be required to retard the effects of corrosion. (Hot water closed recirculating loops will require more treatment chemicals in comparison to chilled closed loops.)

While these systems are designed to not lose water, they often do. For example, a leak occurring at the recirculation pump that goes un-repaired, at a rate of 1-oz/minute loss of water in a 3000 gallon system adds up. Over a 1 year time period, it amounts to over 4100 gallons/year loss, (or more than the entire system volume). Each gallon of water going into the system needs to be treated.

CE WATER will engineer an application-specific treatment program, designed to optimize corrosion protection, which will prolong the lifespan of system piping. We offer several different products, to match the specific needs of your system, metallurgies, water quality & process requirements. **CE WATER** will also recommend specific filtration products to enhance performance and maximize heat transfer efficiencies.

CE WATER Closed Loop: Treatment

Closed Loop Systems are designed to supply either hot or chilled water to a heat exchanger, and then return the water to the point of origin to repeat the process. Regardless of how the system is designed, it will need the following protection.

Corrosion Protection: **CE WATER** offers a comprehensive line of closed loop treatments that give you a sure defense against closed loop corrosion, fouling and microbiological growth. Our product line includes a wide array of corrosion inhibitors to prevent corrosion to all system metals, including ferric and yellow metal components.

Microbiological Control: Even though the system is closed, microbiological attack can occur. **CE WATER's** closed loop biocides control bacteria populations, including aerobic bacteria and anaerobes like sulfate reducing bacteria (SRB).



Filtration: Filtration of closed loops can enhance performance, reduce chemical consumption and reduce periodic maintenance by removing impurities from the system. Filtration systems can be either full-flow or side-stream, (which can reduce the cost of filtration equipment). **CE WATER** offers a variety of application-specific filtration options, including a complete line of filtration equipment for closed loops, including bag and cartridge filter housings and replacement media. (Bags & cartridges capable of removing particles down to less than 0.5 microns are also available.)

Closed Loop Treatment Products & Services

Treatment	Controls & Dispensing	Analysis & Testing	Consulting & Services
Cleaning & Descaling Corrosion Inhibitors Defoamers/Antifoam Deposit & Scale Inhibitors Dispersants Glycol & Hydronic Fluids Microbiocides (EPA Registered) Oxidizing/Non-Oxidizing Biocides Passivation Products Washout/Flushout Treatments	Bypass/Shot Feeders Chemical metering pumps Filtration & Separation Glycol - Feeders Solenoids & Ball Valves Water Meters	Corrosion Monitoring Deposit Analysis Deposit Monitoring Laboratory Analysis Micro & Legionella Tests Remote Monitoring Test Kits Water analysis	Cleaning (Equipment) Energy Management Systems Operator Training Plant/facility flow studies Service-Program Treatment Design Services

Programs available in both liquid & solid-concentrate (drumless) form.

Notice

The material provided in this bulletin is informational in nature and is not intended to be instructions for a particular location or installation. There is no guarantee, warranty or other assurance of fitness of purpose or operational performance or results either express or implied. The user assumes all risk in following the information provided. Always read and follow product safety and performance instructions on product labels, Material Data Safety Sheets and those provided specifically for your requirements by your **CE Water** representative.