MOLYBDATE - THE NEW CHAMP.

The increasing demand on cooling water treatment due to stressed conditions have made researchers look for newer alternatives that provide additional benefit to existing programmes cost effectively. Molybdate is one such find and has now been in commercial use for some years with proven and excellent results. The years of experience have refined the use of molybdate in cooling water treatment with a number of new developments and advances in technology. Typically it is used in synergy with other corrosion inhibitors which has helped in reducing the concentration of molybdate. This has permitted the cost effective use of molybdate without sacrificing it's advantages and effectiveness as a non polluting corrosion inhibitor. In an aerated environment like a open recirculatory cooling water system, ferrous ions form a naturally protective passive layer of iron oxide. When Molybdate is present it gets included in this naturally formed iron oxide passive film. It rapidly and completely passivates the exchanger surfaces in synergy with the other corrosion inhibitors used. The normally porous iron oxide film is made impervious by the iron oxide - molybdate complex, which plugs the porous areas and prevents the transport of aggressive ions like chloride and sulfate reaching the metal surface. It also re-passivates the underlying pits and arrests further corrosion and deterioration of the exchanger surfaces. In a deaerated environment the concentration of molybdate required is higher to afford good corrosion protection. Molybdate is a weak oxidant and in the absence of oxygen forms a passive film by the mechanism of adsorption which requires higher concentration. When coupled with azoles and other commonly used corrosion inhibitors, it provides excellent multi-metal protection. It is also compatible with ethylene glycol. These are reasons why the use of molybdate is increasingly being favoured in the treatment of closed loop systems. Molybdates are very useful in low hardness, low alkalinity waters. Molybdate is classified as a non pollutant at use levels and exhibits very low to negligible toxicity. They also have no effect on the activated sludge process. Features · Anodic inhibitor effective at low concentration · Environmentally safe and nontoxic · Passivates pit and crevice from corrosion. Thus, further deterioration of the metal under deposits arrested. · Effective over a wide pH range · Insensitive to changes in water conditions · Synergistic with oxidizing medium · Excellent corrosion protection with the regular stabilized phosphate programme.