

OptiSperse* HP series

internal treatment

- Minimize metal oxide deposition and caustic corrosion
- Specially designed for boiler systems with high purity feedwater
- Improve boiler reliability
- Exact tailored sodium: phosphate ratio
- Approved for FDA applications
- Custom formulated products available

description and use

OptiSperse HP Series products are aqueous blends of phosphate and polymeric dispersants. These products contain a synthetic carboxylated polymer, which disperses iron and other metal oxides. OptiSperse HP Series products are designed for the control of corrosion and deposition in boilers with high purity feedwater, treated with coordinated phosphate/pH programs.

In boilers with high purity feedwater, the major contaminants are iron and copper oxides. Iron deposits are very porous; this porosity, with free caustic hydroxide in the boiler water, can lead to caustic corrosion. As steam escapes through the chimney-shaped deposits, dissolved solids concentrate under the deposit. Hydroxide is the predominant anion; therefore, sodium hydroxide can concentrate under the deposit to produce caustic concentrations of 10% or more. This results in caustic gouging of boiler metal.

OptiSperse HP Series products address these problems in two ways. First, an exclusive polymer controls metal oxide deposits. Our tailored treatment approach uses a synthetic carboxylated polymer to disperse iron and other metal oxides, maintaining clean heat transfer surfaces.

Find a contact near you by visiting www.suezwatertechnologies.com and clicking on "Contact Us."

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Second, the built-in phosphate buffer neutralizes any free caustic in the boiler water. SUEZ Water Technologies & Solutions formulates the sodium to phosphate ratio required to keep your system within control limits. This combination of chemical mechanisms provides the most effective coordinated phosphate/pH control program available. This treatment buffers the boiler water, preventing localized pH excursions that lead to corrosion of boiler metal (see figure 1).

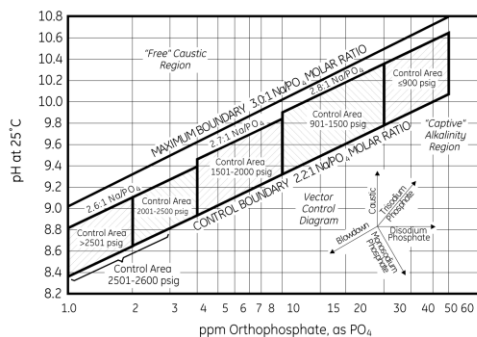


Figure 1: Control diagram for a coordinated phosphate/pH program.

treatment and feeding requirements

Feed Point - Feed OptiSperse HP Series products continuously to the steam drum via a separate chemical feed line.

Feed Rate - Sufficient OptiSperse HP Series product should be fed to maintain the recommended boiler phosphate residual and pH to conform to the coordinated phosphate/pH control limits shown in Figure 1. The products are formulated for specific operating conditions and the type service required. Feedrates depend upon operating pressure, heat transfer rate, feedwater quality, and type of fuel burned.

Dilution - OptiSpense HP Series products may be fed neat or diluted to any convenient strength with good quality condensate, demineralized water, or deaerated feedwater. If diluted, mild agitation should be provided.

Equipment - All chemical feeding equipment and feedlines should be 304 or 316 stainless steel materials. To minimize packing and plunger problems, a diaphragm pump is recommended. These products are suitable for use with PaceSetter* automated chemical feed equipment.

general properties

Physical properties of OptiSpense HP Series products are shown on the Material Safety Data Sheet (MSDS) a copy of which is available on request.

packaging information

OptiSpense HP Series products are liquid blends, available in a wide variety of customized containers and delivery methods. Contact your SUEZ representative for details.

storage

Store OptiSpense HP Series products at moderate temperatures and protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

safety precautions

An MSDS containing detailed information about each product in this series is available upon request.