

OptiSpense* HP5433

Internal Treatment (High Purity Systems)

- Outstanding protection against metal oxide deposition and caustic corrosion
- Designed and field proven for high pressure boilers
- Exact tailored sodium/phosphate ratio
- Cost-effective program cuts downtime and maintenance
- Approved for FDA facilities

Description and Use

OptiSpense HP5433 is an aqueous blend of phosphate, polymeric dispersants, and corrosion inhibitors. The product contains SCP, a synthetic carboxylated polymer, which disperses iron and other metal oxides.

OptiSpense HP5433 is designed for specific operating conditions (PO₄/pH control range) and the type of service required.

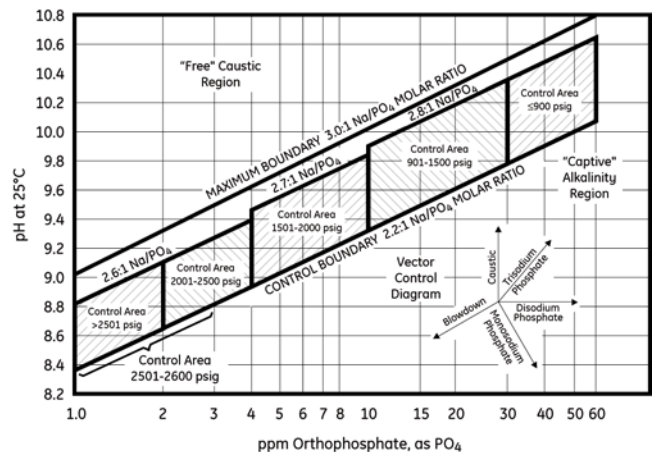
Typical Applications

Hardness is a minor constituent in water of high purity. The major contaminants are typically iron and copper oxides. Iron deposits are very porous; this porosity makes the road to caustic corrosion possible.

As steam escapes through the chimney-shaped deposits, dissolved solids concentrate under the deposit. Hydroxide is the predominant anion. As such, sodium hydroxide can concentrate under the deposit to produce caustic levels of 10% or more. This results in caustic gouging of boiler metal.

OptiSpense HP5433 fights the problem on two fronts. First, its exclusive polymer controls metal

oxide deposits. Second, its built-in phosphate buffer neutralizes any free caustic in the boiler water. GE Infrastructure Water & Process Technologies 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 (Figure 1).



The other key to GE program effectiveness is our metal oxide-specific polymeric dispersant technology. Our tailored treatment approach uses SCP, synthetic carboxylated polymer, to disperse iron and other metal oxides, maintaining clean heat transfer surfaces. Caustic corrosion is prevented by maintaining a phosphate buffer with coordinated control.

Treatment and Feeding Requirements

Feed Point - Boiler steam drum via separate chemical feedline.



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Feedrate - Feedrates depend upon operating pressure, heat transfer rate, feedwater quality, and type of fuel burned. Sufficient Optisperse HP5433 should be fed to maintain the recommended boiler phosphate residual.

Dilution - Use good quality condensate, demineralized water, or deaerated boiler feedwater to make a convenient feeding strength. The material may be fed neat or diluted in any proportion. If diluted, mild agitation should be provided.

Equipment - Optisperse HP5433 can be fed using polyolefin tanks with stainless steel piping, pump internals, fittings, and shut-off valves. Relief valves, agitator shaft and propeller should be stainless steel. Consult your GE representative for specific information.

General Properties

Physical properties of Optisperse HP5433 are shown on the Material Safety Data Sheet, a copy of which is available on request.

Packaging Information

Optisperse HP5433 is a liquid blend, available in a wide variety of customized containers and delivery methods. Contact your GE representative for details.

Safety Precautions

A Material Safety Data Sheet containing detailed information about this product is available upon request.