GE
Water & Process Technologies

Fact Sheet

CorTrol* IS Series

Inorganic Oxygen Scavengers

- Controls preboiler and boiler oxygen corrosion.
- Reacts rapidly
- Improves boiler reliability
- Easy to handle products

Description and Use

CorTrol* IS Series - inorganic oxygen scavengers, are based on either sodium bisulphite or sodium sulphite and are available as either liquid or powder blends and can contain a catalyst. These products are highly effective at scavenging dissolved oxygen, especially at low feedwater temperatures.

These products are very cost effective, simple to feed, easy to monitor and are most appropriate for boiler systems with softened make up water.

These products should be fed to the storage section of a deaerator, hot well or feedwater tank.

Some CorTrol IS Series products are approved for FDA applications.

For systems operating at pressures that are greater than 63 kg/cm² (900 psig) or for systems, which use boiler feedwater for steam desuperheating or attemporation consult your GE representative.

Typical Applications

Oxygen corrosion, "pitting", is most often seen in the feedwater circuit, economizer and condensate system. Oxygen pitting can lead to leakage and equipment failure in a relatively short period of time.

In the feedwater train, the deaerator is the focal point for oxygen removal. Efficient mechanical deaeration reduces the dissolved oxygen to very low levels. However, these small quantities of dissolved oxygen that remains after deaeration may induce oxygen corrosion.

Oxygen corrosion also frequently occurs during start up and shutdown and while the boiler system is on stand-by or in storage. This is caused by oxygen in-leakage and is a result of a large amount of cold water contacting the unit for a relatively short period.

CorTrol IS Series products can contain a catalyst to accelerate the reaction with oxygen, as shown in the following reaction:

$$2Na_2SO_3 + O_2 \rightarrow Na_2SO_4$$

The rapid reaction rate provided by the catalyst is obtained over commonly encountered boiler feedwater pH levels. The optimum boiler feedwater pH for the oxygen scavenger action is 8.0 to 9.0.

Catalysed sodium sulphite, bisulphite are the chemical treatments most commonly used to control oxygen corrosion in boiler systems operating below 63 kg/cm² (900 psig). It can also be used under well-defined conditions in higher-pressure systems.

Sodium sulphite is used because it:

1. Reacts rapidly with dissolved oxygen
2. Is easy to apply and control and consequently
3. Provides good system protection

When applied to the preboiler or boiler system, CorTrol IS Series products protect metal surfaces from oxygen attack.

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Treatment and Feeding Requirements

Feed point - CorTrol IS Series products should be fed to the deaerator storage section, hot well or feedwater tank if no attemporation water is used. Check with your local GE representative to determine the specific conditions in your system in order to define the optimum dosing point.

Feed rate - The feed rate is based on the residual dissolved oxygen level in the deaerated water, the cycles and the desired sulphite residual in the boiler water. Feed continuously.

General Properties

The physical properties of CorTol IS Series products are shown on their individual Safety Data Sheets, a copy of which is available on request.

Packaging Information

CorTrol IS Series products are liquid or powder blends and are available in a wide variety of customised containers and delivery methods. Contact your local GE representative for details.

Safety Precautions

A Safety Data Sheet containing detailed information is available on request for each specific CorTrol IS Series product.

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