

Steamate* PAS4011

Condensate Corrosion Inhibitor

- Combines the corrosion protection of neutralizing amines with the metal conditioning of an organic oxygen scavenger
- Includes the patented GE Diamine, to maximize neutralization of acids in condensate systems
- Reduces condensate iron and copper levels, increasing the quantity and quality of reusable condensate and minimizing waste

Description and Use

Condensate corrosion products are one of the major contributors to deposition in boiler feedwater heaters, economizers, and on boiler internal surfaces. Condensate corrosion is primarily caused by the presence of carbon dioxide and oxygen. Feedwater alkalinity decomposes in the boiler to produce carbon dioxide, which evolves into the steam. This gas dissolves into the condensate to produce carbonic acid, lowering the condensate pH and producing metal loss.

Oxygen is found in condensate systems primarily because of air leakage into the system through condensers and transfer pumps. Once in the condensate system, oxygen attacks metal through a pitting corrosion mechanism. The metal oxides produced through condensate corrosion can return to the boiler in the feedwater system, where they may deposit on economizer and boiler internal surfaces. Deposits of metal oxides impede heat transfer and cause metal overheating and failures. If the corrosion problem in the selected condensate stream is severe, the stream is frequently sent to waste instead of being returned to the feedwater system. This increases the demand and operating costs for the influent treatment and waste treatment systems.

In order to protect against carbonic acid corrosion throughout a condensate system, Steamate PAS4011 uses a unique blend of neutralizing amines, chosen for their ability to distribute throughout complex steam and condensate systems, and for their superior abilities to neutralize acids and elevate condensate pH. This blend includes the patented GE Diamine, one of the most powerful neutralizers available for condensate corrosion control.

In addition to the blend of neutralizing amines, Steamate PAS4011 utilizes an organic oxygen scavenger and metal conditioner. The oxygen scavenger reacts with oxygen to minimize pitting and corrosion and promotes the formation of protective iron oxide in the condensate system. Once the protective metal oxide layer is formed, continued feed of Steamate PAS4011 helps to maintain it. The results are improved corrosion control and a reduced level of corrosion products in the boiler feedwater.

Improved corrosion control reduces the potential for boiler tube failures and the need to dump condensate to waste. It also minimizes energy and maintenance costs associated with corrosion-related failures of piping, exchangers, and steam traps. Improved feed-water quality can also provide increased cycles of concentration in boiler systems, which means saving water, chemicals, and energy.

Treatment and Feeding Requirements

Steamate PAS4011 can be fed to the feedwater, main steam heater, or condensate system for system wide effectiveness.

Control is based upon a combination of boiler feedwater alkalinity, system metallurgy, and amount of returned condensate. Your GE representative will assist you in determining an op-



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timal feedrate for your system. Steamate PAS4011 should be fed continuously.

This product can be fed neat or diluted to any convenient feeding strength. Good quality condensate or demineralized water should be used for dilution.

Chemical feed tanks and storage tanks should be mild or stainless steel. Mild steel pumps, valves, and feedlines are acceptable. This product is not compatible with PVC, nylon, natural rubber, butyl rubber, Buna N, Buna S, urethane, Tygon, or Viton. The product is compatible with Teflon and polypropylene. (Tygon is a registered trademark of Norton Co., Viton and Teflon are registered trademarks of DuPont.)

General Properties

Physical properties of Steamate PAS4011 are shown on the Material Safety Data Sheet, a copy of which is available on request.

Packaging Information

Steamate PAS4011 is a liquid blend, available in a wide variety of customized containers and delivery methods. Contact your GE representative for details.

Storage

Store the product in a ventilated area, in the shade, away from heat or open flame.

Safety Precautions

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