

ZI-CHEM 9241

Fuel Treatment Combustion Improver

HIGHLIGHTS

ZI-CHEM 9241 combustion improver is a granular complex of metallic oxides, designed specifically to prevent the formation that can occur with the use of solid fuels including coal, wood, palm oil fibre, and various other fuel sources including heavy fuel oil.

Combustion-related problems in boilers include slagging, fouling, and high temperature corrosion of heat transfer surfaces and exhaust surfaces of boilers and other combustion equipment.

Deposition is related to the presence of impurities in the fuels being burned and combustion conditions. High temperature deposition occurs when molten ash from the fuel impurities contacts metal surfaces of the combustion chamber, where it solidifies due to the lower temperature of the surfaces.

When this material contacts a metal surface, additional ash particles are trapped in the sticky molten mass resulting in rapid growth in the thickness of the mass. This fouling is known as slagging. Deposit build-up results in lost efficiency and reduced heat transfer. In a boiler this results in reduced steam output, and/or more fuel used for the same steam produced. Because these deposits are dense and adherent, soot blowing may not be able to remove them. Once deposits form, corrosion can occur beneath the deposits. High temperature corrosion causes metal loss and eventual tube failure.

ZI-CHEM 9241 eliminates these problems by physically and chemically combining with various ash constituents to disrupt the stable deposit matrix, making it much easier to remove by conventional soot blowing. This is accomplished through a unique mechanism produced by the thermal expansion (by up to 15 times its original volume) of the additive particles. When incorporated into a deposit matrix, this expanded particle creates split in the deposit matrix, where it eventually breaks and is blown out with the flue gas.

TYPICAL PROPERTIES

- Appearance: White powder
- Density: 3.58 @ 25 C
- pH (1% solution) 1.1 – 1.2
- Boiling point: N/A

PRIMARY APPLICATIONS

Determining the feed rates for ZI-CHEM 9241 depends on many factors, such as the operating characteristics of the combustion process and severity of the problem. Normal feed rate ranges between 100 – 400g per ton fuel. Your ZI-TECHASIA technical representative will advise you the correct feed rate for your application.

FEEDING & CONTROL

ZI-CHEM 9241 can be fed continuously through a pneumatic powdered feed system directly to the furnace near the upper furnace where the temperatures are in the range of 600 - 900 °C. Alternatively if the fuel is fed via a conveyer feed systems, ZI-CHEM 9241 can be placed onto the fuel entering the combustion chamber 1 – 2 times per shift.

THE BENEFITS

- Cleaner firebox tubes & around burner
- Cleaner evaporator & heat exchange tubes inside the furnace
- Easy removal of slag residual
- Prevent significant loss due to lost production
- Improve boiler efficiency
- Result in noticeable fuel saving
- Longer boiler equipment service life

COMMON APPLICATIONS

- Coal fuel
- Heavy fuel oil with slag
- Palm oil fiber fuel
- Various other fuel sources

PACKAGING

- 25kg plastic pails
- 200kg drums

HANDLING & SAFETY

ZI-TECHASIA maintains a database of material safety data sheets (MSDS) on all our products. These contain health & safety information to assist in the safe and appropriate chemical handling, ensuring the protection of personnel.

