

# MagCare 30B

High- and low temperature corrosion inhibitor

## Product Data Sheet

**MagCare 30B** is an oil compatible magnesium additive for use as a corrosion inhibitor in both crude oil and residual fuels. It combats corrosion in hot parts of the system caused by low melting deposits containing vanadium and sodium as well as corrosion in the cooler parts of the plant caused by condensation of sulphuric acid. In the first instance it forms magnesium compounds which have a higher melting point and therefore do not adhere to the plant walls, in the second instance the basic magnesium compounds neutralise the acidic mineral acids.

**MagCare 30B** is the product of a Nano technology development. Ultrafine particles are suspended in an organic medium; it is extremely stable and shows no sign of sedimentation even after several years standing.

### Application

**MagCare 30B** is recommended for the reduction of hot and cold corrosion and modification of the slagging tendency of heavy or residual grade fuel oils. **MagCare 30B** is recommended as an additive for use in open flame Boilers in Industrial and commercial plant. **MagCare 30B** significantly increases the melting point of corrosive vanadate and nitrate containing residues in the combustion chamber by forming a of powdery, non-tenacious ash deposits, which can be more easily removed by soot blowing. Without the magnesium other vanadate salts are formed (e.g. sodium) which have low melting point and adhere to the boiler surface, Vanadates are well known oxidation catalyst and once these materials are stuck onto hot surfaces they dissolve the protective oxide layer and accelerate the oxidation of the metal at the location. The only way to remove this hard slag is manually involving shutting down of the plant.

In the cold sections of the plant (the flue system) the condensation of sulphuric acid has to be avoided by maintaining a temperature above the dew point. The higher the concentration of SO<sub>2</sub>/3 in the gaseous stream the higher the dew point temperature necessitating maintain hotter conditions throughout the plant (and hence excessive thermal losses). With **MagCare 30B** the sulphurous / sulphuric acids are neutralised and thus the dew point of the gas stream lowered. The consequences are that the plant can be operated at lower temperatures with no risk of corrosion and a considerable energy saving.

At a stroke **MagCare 30B** will suppress hot corrosion in the boiler and reduce down time and damage to the walls of the plant and avoid corrosion of the cooler flue system enabling a reduction in heat losses.

**Magcare 30B** is a ready to use oil soluble liquid and it is easily metered directly into the fuel handling system. The dosage rate is dependent on content of vanadium, sodium and sulphur.

### Features and Benefits

- Highly reactive sub-micron magnesium oil soluble fuel additive
- Inhibits high temperature corrosion of Furnace, Super Heater and ReHeater Tubes.
- Modifies Boiler Plant / Process Heater Fly Ash
- Lowers Acid Dew Point of Exhaust Gases.
- Reduces Boiler Plant Cold-End corrosion.
- Prevents formation of low melting deposits of vanadium and sodium.
- Neutralises acid forming SO<sub>2</sub> and SO<sub>3</sub>.
- Maintains boiler efficiency and promotes operational economy through improvement in cleanliness, reduced down time and reduced thermal losses.
- Extends boiler operation periods, and boiler availability.
- Promotes the formation of powdery friable fireside ash.

### Product Applications

Conventional Oil Fired Boiler Plant

Refinery Process Heaters

### Storage

The storage stability is 6 month in closed containers.

### PROPERTIES

MgO in wt%: 30

Appearance: Reddish Brown Liquid

Viscosity @ 30°C: < 170 cP

Specific Gravity @ 30°C Approx. 1.08

Particle Size: d90 below 2 micron

### Material Compatibility

#### Suitable:

Metals: 316 Stainless Steel, 304 Stainless Steel, Mild Steel, Admiralty Brass, Aluminium, Copper.

Plastics: PVC

Elastomers: TEFLON, VITON

#### Not suitable:

Plastics: Polypropylene HD, Polyethylene HD, Polyethylene Linear  
Elastomers: Buna N, Neoprene, HYPALON, EPDM.

### PACKAGING

200 L Epoxy Coated Metal Drums

1000 L IBC

### HANDLING

**MagCare 30B** should be handled in the same way as diesel oil.

Please refer to the product label and the Material Safety Data Sheet (MSDS) for more detailed information.

The information given in this document is based on the present state of our knowledge, but any conclusions and recommendations are made without liability on our part. Buyers and users should make their own assessment of our products under their own conditions and for their own requirements.

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