

TC-200A GAS TURBINE FUEL ADDITIVE

(Vanadium Corrosion Inhibitor Additive)

1. INTRODUCTION

The purpose of this document is to provide the instructions regarding the use of TianChen TC-200A, an oil-soluble ultra-high alkali magnesium additive (hereinafter referred to as TC-200A) to inhibit corrosion by the vanadium in fuel oil for gas turbine under high temperature.

TC-200A is an oil-soluble, turbine-quality, organo-magnesium fuel additive for gas turbine. TC-200A is prepared by the reaction of high-purity magnesium compounds with carboxylic acid. It has excellent physical and chemical properties with unique formulation and completely owns the right of knowledge. It can be easily dissolved in heavy fuel oil with any proportions. TC-200A can provide MgO to burn with V_2O_5 which is produced from heavy fuel oil injurant to form high-melting-point vanadium-magnesium compound by chemical combination to inhibit vanadium corrosion, and the compound turns into scattered ash flowing out with turbine exhaust gas.

The ratio of magnesium in TC-200A and vanadium in heavy fuel oil should be around 3~3.5 (Mg:V=3~3.5), or should be referred to the gas turbine instructions. The nickel in the heavy fuel oil must be calculated with vanadium for TC-200A dosage.

TC-200A is strictly manufactured according GE standard GEK28150B. It is stable on hydrolysis, oil-soluble, non-volatile and innocuous etc. It is generally applied to heavy duty gas turbine used in industrial, marine and utility applications.

2. TECHNICAL SPECIFICATION

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|---------------------|-------------------------------|
| Additive Type | Oil soluble and oil dispersed |
| Magnesium content | ≥ 20% |
| Physical appearance | Brown or black viscous liquid |
| Density | 1.20~1.25g/ml (20℃) |
| Viscosity | ≤60mm ² /s (40℃) |
| Flash Point | > 65℃ |
| Pour Point | < -20℃ |
| Contaminants | |
| Na+K | ≤50mg/Kg |
| Ca | ≤500mg/Kg |
| Pb | ≤5mg/Kg |
| V | ≤5mg/Kg |

3. PACKING AND SHIPPING

TC-200A is an industrial chemical, packing and shipping should be accomplished in accordance with acceptable commercial practices for petroleum fractions type of product. Avoid visual fire and high temperature. Avoid contacting with skin and eyes. TC-200A can be pumped into tanks directly when ambient temperature is below 50°C, and it's not corrosive to carbon steel, stainless steel or aluminum. It can be stored for a long time in the original 200-Liter iron container without significant physical change. Packing can be treated with customized request when it doesn't impact the product quality or transportation. The transporting class: Petroleum fractions type of product.

TC-200A is stable in water, no hydrolysis, no agglomeration, effective storage period of one year. It may have stratification phenomenon after long-term storage, stir and mix thoroughly before use, and it won't affect the product performance.