

DESCRIPTION

AMERGIZE deposit modifier/combustion improver is a unique blend of oil soluble organo metalics which have been shown to be most effective in 2-stroke and 4-stroke diesel engines operating on residual fuels. Engine tests have shown that the combined ingredients in AMERGIZE deposit modifier/combustion improver provide a synergistic effect to reduce exhaust gas deposits and improve overall combustion.

AMERGIZE deposit modifier/combustion improver is effective for minimizing problems related to combustion deposits resulting from high vanadium, sulfur and sodium contents in fuel. AMERGIZE is also effective for use in selective catalytic reduction (SCR) systems that have problems related to the formation of corrosive ammonium bisulphate (ABS), which can form and accumulate during low temperature/load operation.

AMERGIZE is also suitable for gas turbine application in mitigating the effects of common trace metals that may be present, particularly in distillate fuel oil. Considering that 1 mg/kg (ppm) of vanadium or sodium in fuel is equivalent to 0.45 kg (1 lb) every 50 hours, these metals have been identified by turbine OEM as the leading cause of turbine blade corrosion.

First, the deposit modifier component in the product works during the combustion process by reacting with vanadium, sulfur and sodium in the fuel and changing the resulting composition and exhaust gas ash content. High and low temperature corrosion is prevented by: (1) raising the melting point of the vanadium compounds so they are nonadherent and noncorrosive to hightemperature surfaces, (2) changing the crystalline form of the ash so that it is light, friable and easily exhausted, (3) inhibiting the vanadium so that it cannot act as a catalyst to convert SO^2 to SO^3 and (4) in its capacity as an alkaline compound, neutralizing any acid formed.

Joint tests conducted with a major engine manufacturer proved that AMERGIZE deposit modifier/combustion improver can substantially prevent the buildup of exhaust gas side deposits of turbochargers. As a result, the rated efficiency of the turbocharger can be maintained and waterwashing can be significantly reduced.

Second, the combustion improver component in the product contains an effective catalyst which lowers the ignition energy required to more effectively complete the combustion process, thus providing less carbon deposits, soot and smoking. In addition, laboratory tests with test bed engines have shown that AMERGIZE deposit modifier/combustion improver will reduce specific fuel consumption.

APPLICATION AND USE

The typical dosage rate for AMERGIZE deposit modifier/combustion improver is in the range of 1 liter to 1,000 - 8,000 liters (1 - 8 tons) of residual fuel for diesel engine and boiler application. Rates will vary depending on the contaminant levels of the fuel, engine design and operating conditions of the engine and SCR, if present. Refer to the Fuel Analysis Treatment Dosage Chart for optimizing the dosage rate based on the highest contaminant test result.

For turbine distillate fuel application, use 1 liter to 30,000 liters (30 tons). Please contact Drew Marine for optimizing the dosage requirements for heavy duty turbine residual fuel application as the vanadium and sodium content will vary from each bunkering.

FEATURES

- Effective deposit modifier reduces hightemperature exhaust deposits and hightemperature corrosion
- Minimizes lowtemperature acid corrosion and reduction of lube oil TBN (alkalinity)
- Effective combustion catalyst improves overall combustion
- Inhibits vanadium from catalyzing sulfur oxides
- Combination product provides synergistic effect
- Completely soluble in fuel prevents removal during centrifuge operation

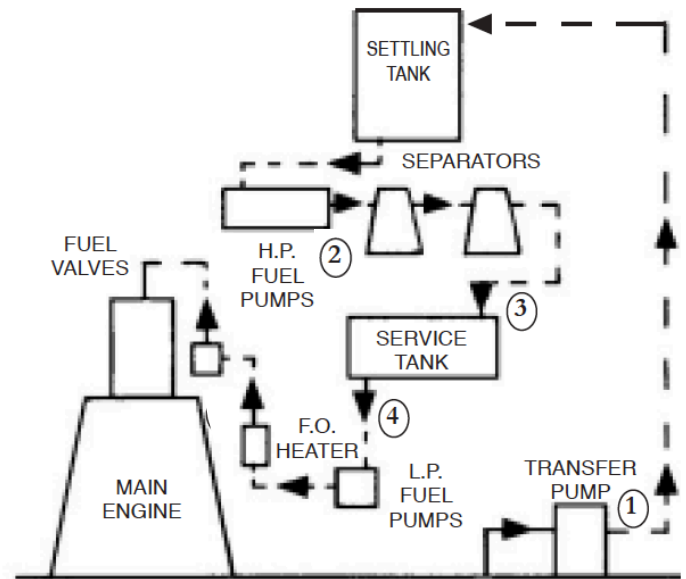
BENEFITS

- Extends cylinder liner, exhaust (valves, turbocharger life and protects from premature wear)
- Reduces or eliminates the need to waterwash turbocharger gas side
- Reduces fuel consumption
- Reduces carbon deposits
- Reduces smoke and exhaust gas emissions
- Eliminates need for separate products
- Prevents corrosion on SCR and waste heat economizer surfaces from ABS

It is recommended that fuel deliveries are representatively sampled and analyzed to monitor overall fuel quality and to determine levels of contamination. Consult your local Drew marine representative for further discussion on fuel samplers, fuel analysis services and onboard fuel testing. Following is a “Rule of Thumb” guide for recommending the proper dosage rates. Since these contaminants exist in combination, the dosage rate selected should be the one corresponding to the highest level of the major contaminant present.

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It is recommended that the product be metered continuously into the fuel. This is best accomplished by the use of a metering system (DREW™ Beta Metering System). Dosing in this manner assures proper mixing, dispersion, and sufficient quantities of AMERGIZE® deposit modifier/combustion improver when needed. It is usually recommended that the product be dosed to the low pressure side of the fuel treatment system, but the actual dosing location may vary depending on the engine layout and design. The diagram below outlines typical treatment locations.



Recommended injection points for AMERGIZE low sulphur fuel oil conditioner in typical main engine fuel arrangement:

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TREATMENT CHART

FUEL ANALYSIS CONTAMINANT TEST RESULT

DOSAGE RATE	VANADIUM (mg/kg)	SULPHUR (%m/m)	CARBON RESIDUE(%m/m)
1 to 1000	>350	>3.50	>20
1 to 2000	250 - 350	2.75 - 3.50	18 - 20
1 to 3000	200 - 250	2.50 - 2.75	15 - 18
1 to 4000	150 - 200	2.25 - 2.50	12 - 15
1 to 5000	100 - 150	2.00 - 2.25	10 - 12
1 to 6000	50 - 100	1.75 - 2.00	8 - 10
1 to 7000	<50	1.50 - 1.75	<8
1 to 8000		<1.50	

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear brown liquid
Density @ 25°C:	0.93 g/cm ³
Solubility:	Soluble in all proportions in fuel
Flash Point (PMCC):	61.1° C Min.

NOTE: Always wear the appropriate personal protective equipment when using this product.

PACKAGING

AMERGIZE deposit modifier/combustion improver is available in 25 liter (PCN 0098401) and 200 liter(PCN 0098427) containers.

IMPORTANT INFORMATION

Drew Marine maintains Safety Data Sheets on all of its products. Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees.

Our Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Drew Marine products.



Contact your Drew Marine representative for more information

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