



## material safety data sheet :

### **F.O.T. - ULS™**

#### **DESCRIPTION :**

F.O.T. - ULS is a fuel additive which improves the lubricity of all low Sulfur Marine Fuels. It is a combination of specific solvents, lubricity additives, ashless dispersants, detergents and corrosion inhibitors. Emission concerns have led to the application of new regulations in Marine Fuels. According to the revised IMO MARPOL Annex VI-2008 the Sulphur globally will not exceed the 3,5% in all Marine Fuel Oils. However, there will be SO<sub>x</sub> Emission Control Areas (SECA's) where the Sulphur content in fuel must not be more than 1.0%. Strictly regulations are in effect now in European Union ports, where the Sulfur content of fuels in these areas is not allowed to be more than 0,1%. Reducing the level of Sulphur compounds in the Marine Fuel Oils can reduce the ability of the oil to lubricate the injection system of the engine, causing the fuel injection pump of the engine to fail. Lower lubricity can significantly increase wear of fuel pumps, valves and injector nozzles over an extended period of use. F.O.T. -U LS provides superior lubricity properties to the Marine Fuel Oils in order to avoid these situations. Furthermore contains detergent and dispersant additives to prevent problems associated with the accumulations of injector deposits. F.O.T. - ULS reduces significantly the injector deposits and therefore has a positive effect on emissions (smoke, carbon monoxide, unburned hydrocarbons and particulates). Additionally, the fuel system is protected against corrosion.

#### **ADVANTAGES AND CHARACTERISTICS :**

- Provides superior lubricity properties to the Marine Fuel Oils
- Prevents wear on contacting metal Surfaces and their fail.
- Protects fuels systems against corrosion and will not separate in the fuel tank.
- Easy to apply and use in the fuel oil with excellent results.
- Contains ash less dispersants and detergents.

#### **PHYSICAL PROPERTIES :**

Appearance/Color : Clear, yellow liquid

Odor : Aromatic solvent odor

Density at 15° C : 0.88 - 0.92 gr/cm<sup>3</sup>

Cloud Point : -25° C (ASTM D 2500)

Pour Point : -47° C (ASTM D 445)

Flash Point : 54° C

**KEMOTOR: MARINE CHEMICALS & CLEANING & MAINTENANCE**



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#### APPLICATION AND USE:

##### Dosing Procedure

For Marine Gas Oils (MGO) and Marine Diesel Oils (MDO), the normal dosage of F.O.T -U LS is 1 lt per 5 cubic meters of fuel. For Intermediate Fuel Oils (IFO) and Heavy Fuel Oils (HFO) the dosage of 1lt of F.O.T - ULS per 4 cubic meters of Fuel Oil, to deal with the problem of injector deposits and emissions. For Fuel Oils with more than 2% of Sulphur content lubricity additive is not required, because the Sulphur compounds provide proper lubrication.

##### Feeding Procedure

F.O.T -U LS should be dosed directly in the fuel storage tank, preferably prior to bunkering. This way the product is better dispersed in the fuel. It is suggested, to dose firstly the requested quantity of F.O.T -U LS and then add the Low Sulphur Fuel Oil in the settling tank, in order to accomplish better homogenization.

#### SAFETY AND HANDLING:

|                             |  |
|-----------------------------|--|
| <b>HANDLING</b>             | Handle with care. Store in a dry, cool and well ventilated environment.  |
| <b>SAFETY</b>               | IMMEDIATE ACTIONS.   |
| <b>Eye Contact</b>          | Avoid Eye contact. Otherwise, flush with plenty of water for a few minutes. Seek medical attention.  |
| <b>Skin Contact</b>         | Avoid Skin contact. Otherwise, wash contaminated area thoroughly with water. Seek medical attention.   |
| <b>Inhalation</b>           | Do not breathe gas/vapors. Otherwise, seek fresh air source at once. Seek medical attention. In case of insufficient ventilation, wear suitable respiratory equipment. |
| <b>If Swallowed</b>         | Avoid ingestion. Otherwise, consume a considerable quantity of water. Do not induce vomiting. Seek medical attention.  |
| <b>GENERAL INSTRUCTIONS</b> | Avoid spillage, splashing and mishandling. Precautionary measures for body protection are strongly. recommended before use   |

**Read the Material Safety Data Sheet before using this product.**

*For detailed information on safety and health, please refer to Material Safety Data Sheet and/or Product Label.*

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