GF2 Fuel Treatment The Pollution SolutionTM

GF2 can be used to treat #6 fuel oil (Bunker Fuel).

APPLICATION: 1 GALLON OF GF2 WILL TREAT 5000 GALLONS. 1 LITER OF GF2 WILL TREAT 5000 LITERS

#6 fuel oil or “Bunker” fuel is high in sulfur and more viscous than diesel fuel.

The following are some of the benefits of using GF2 Fuel Treatment in Bunker fuel:

1. **Combustion Catalyst.**
   Burn rate modifier–lowers the initial burn by 400 degrees, burns the lower end of the BTU’s, and allows a longer resonance burn.

2. **Reduced exhaust soot particles and exhaust gases.**
   • Reduced carbon emissions (Smoke) by 30-70%
   • Reduced green house gases CO, CO2, SO, SO2, HC
   Bunker fuel is exceptionally high-sulfur. Reducing the sulfur dioxide is especially beneficial.

3. **Reduces Engine Carbonization.**
   Reduces engine carbon build-up by up to 50%

Reduces engine wear from carbon build up
Reduces de-carbonization maintenance.
Significantly extends the life of pistons, liners, injectors, and valve train components.

4. **Polymerization Retardant**
   Bunker fuel has a longer molecular chain; almost 3 times longer than diesel fuel. This means it's more difficult for the longer molecule to get enough oxygen for complete effective burning. Hence why ships have to revert to number 2 diesel fuel 25 miles out before coming into, after leaving, and while being docked at some ports (due to environmental laws). The polymerization retardant will delay the process of the oil returning to crude oil and creating even longer molecular chains.

5. **Corrosion Inhibitor**
   The corrosion inhibitor will prevent fuel tank corrosion and fuel system corrosion caused by water in the fuel.

6. **Lubricity and Detergents.**
   Lubrication in the fuel will reduce fuel system component wear and extend the life of fuel system components. The detergent will reduce the build up of sludge and varnish in the fuel lines, injectors, pumps, and valves. Keeping the fuel system clean will extend the life of fuel system components and more importantly keep the engine running reliably and economically.

7. **Water Demulsifier and detergents.**
   Helps reduce the sludge, water, and solids from forming and collecting in the fuel tank and fuel lines. The solid fuel particles

can collect in filters and reduce the life of the filter. The demulsifier and detergents will reduce the water and solid particles in the fuel. The GF2 will help maintain a clean fuel system, free from water, sludge and corrosion.

8. **GF2 is an EPA and ISO standard registered product.**

"Since the 1980s the International Organization for Standardization (ISO) has been the accepted standard for marine fuels (bunkers). The standard is listed under number 8217, with recent updates in 2005 and 2010. They have broken it down to Residual and Distillate fuels. The most common residual fuels in the shipping industry are RMG and RMK. The differences between the two are mainly the density and viscosity, with RMG generally being delivered at 380 centistokes or less, and RMK at 700 centistokes or less. Ships with more advanced engines can process heavier, more viscous, and thus cheaper, fuel. Governing bodies (i.e. California, European Union) around the world have established Emission Control Areas (ECA) which limit the maximum sulfur of fuels burned in their ports to limit pollution, reducing the percentage of sulfur and other particulates from 4.5% m/m to as little as . 10% as of 2015 inside an ECA. As of 2013 3.5% continued to be permitted outside an ECA. This is where Marine Distillate Fuels and other alternatives[6] to use of heavy bunker fuel come into play. They have similar properties to Diesel #2 which is used as road Diesel around the world. The most common grades used in shipping are DMA and DMB. Greenhouse gas emissions resulting from the use of international bunker fuels are currently included in national inventories."

"Fuel Oil". Wikipedia: The Free Encyclopedia. Wikimedia Foundation, Inc., date last updated (17 July 2013). Web. Date accessed (10 September 2013.) <http://en.wikipedia.org/wiki/Bunker_fuel#Bunker_fuel>