

Pacific Petroleum Ltd

Product Info

Fuel & Lube Oil Additives

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Pacific Petroleum Ltd – PRODUCT BENEFITS

This product information will inform you about the economical and technical benefits and how massive the ROI will be to your fleet after you start using our products, all verified by many years of steady customers own reports and official evaluations from different institutes around the world from the early 1980s until today. The cost of implementing the additives are offset already at a fuel saving of less than 1% (!).

Technical improvements:

Asphaltenes and sludge will be dissolved from the fuel .

Blocked injectors with poor spray effect will be clean and with improved spray

function. Carbon deposits on and under piston rings become clean and maintain clean

Significant reduction of cylinder sludge and clean scavenge ports

Reduced friction in the cylinder liner allows the exhaust gas temperature to be reduced 30-40 degrees C.

Black smoke from boilers will after adjusting the airflow and adding our additives go from black thick smoke to be invisible, similar to hot air without color.

3-6% reduced fuel consumption with PP3-F

2.9-4.2% reduced fuel consumption with PP2000 & PP-C

= **Net savings for the customers**

Up to 75% reduction of black smoke emission/soot with PP3-F + PP2000

Up to 8.9% increased injector function with PP3-F

Up to 82% reduction of metal wear in cylinder liners with PP-C

Up to 4.2% increased mechanical efficiency with PP2000 & PP-C

Please observe the following:

THE RESULTS MAY VARY FROM SHIP TO SHIP DUE TO AGE AND TECHNICAL PRECONDITION; OLDER ENGINES WILL SHOW MORE IMPROVEMENTS THAN NEW ENGINES.

REGARDLESS OF THIS FACT - THE TECHNICAL BENEFITS FROM USING OUR ADDITIVES COUNTERACTS MANY FUTURE PROBLEMS FROM WEAR AND TEAR AND WILL GIVE A REDUCED FUEL CONSUMPTION EVEN IN A BRAND NEW VESSEL. THAT IS WHY OUR PRODUCTS IS PERFECT FOR ANY VESSEL REGARDLESS OF AGE AND PRECONDITION.

References: (See website <http://pacificpetroleum.wordpress.com>)

Research report by NTUA & Anek Lines 2001

Stena Line U.K 1997

Engine performance test by S.E.M.T Pielstick – Granted an approval for use 2001.

DEI – Greek public power corporation and NTUA 2001

Ventouris Ferries 1994

Shanghai Marine Diesel Engine Research Institute 1984

Transman Shipmanagers 2004

Halkidon Shipping 2005

Genoa Maritime 2006

What has happened to the bunker fuel?

- More than 85% of all crude oil is being processed for industrial use leaving only 10 - 15% for the marine market.
- The result is that today's residual fuel has:
 - Higher viscosity
 - More hydrocarbon sludge
 - More carbon residual (up to 18%)
 - Higher vanadium content
 - Higher amount of asphaltenes
 - Slower burning elements
 - Less sulfur (0,1 to 1,5%)
- ALL CAUSING PROBLEMS IN DIESEL ENGINES, RESULTING IN HIGH SMOKE EMISSION VALUE.

Asphaltenes

The classic definition of asphaltenes is based on the solution properties of petroleum residues in various solvents. Asphaltenes are, broadly speaking, n-heptane insoluble and aromatic soluble. Fuel oil with high level of asphaltenes will result in injector malfunction and heavy carbon deposits.

Combustion related problems

- Smoke & soot formation.
- Unburned carbon deposits.
- Combustion debris to lube oil leads to lube oil degradation.
- Piston & Ring fouling.
- Poor valve and ring sealing.
- Poor lubricant performance results in cylinder wear.
- Cylinder liner cracking due to irregular spray pattern.

Post-combustion problems

- High temp corrosion
- Low temperature (acidic) corrosion
- Exhaust valve pitting/corrosion
- Piston Crown corrosion
- Turbo charger fouling from carbon & ash deposits
- Economiser fouling & corrosion
- Soot fires in economiser
- Excessive acid production gives TBN reduction in cylinder lube oil
- Economizer before and after use of combustion catalyst

PP3-F FUEL OIL ADDITIVE

PRODUCT SPECIFICATION AND APPLICATIONS.

PP3-F Fuel oil treatment is an additive for all types of diesel fuels and marine diesel engine residual fuel oil. Better total function of fuel injection system, with less fouling of fuel pumps and injectors. Increases the injector efficiency with 10% or more, due to less soot build-up on the injectors (trumpet).

More complete combustion due to increase of the Cetan value of the fuel oil and a higher heat release rate. (Combustion catalyst)

Can replace the use of expensive Marine Gasoil in the fuel oil.

Reduce SOOT emission up to 50% when the engine operates on 50 % of full load. Up to 75% reduction of SOOT when the engine operates on full load.

To be injected into the fuel line before the fuel booster pump, or added in to the fuel tank.

Reduces fuel oil consumption with 3%, which will offset the cost for the use of the additive.

When added into the fuel storage tank the additive have a strong detergent effect on fuel oil sludge and petroleum based sediments. 1-liter additive per M/T fuel will dissolve 1,6-kg sludge. As an example for a vessel consuming 1000-ton fuel per month, regular use of the additive will reduce the total fuel sludge and deposits in the storage tank with almost 20 ton per year.

Doze: Depending of fuel quality. HFO 380 cSt 1 liter per ton fuel.

IFO 80 - 180 cSt 0,5 - 1 liter per ton fuel.

SPECIFICATIONS

Appearance/Odor Medium brown/slight alcohol odor.

Specific Gravity @ 69F 0,880

Percent volatile by volume (%) 80,0

Solubility in water Negligible

Composition: Extreme pressure lubricant.

Petroleum Carriers.

Cetan Booster.

Corrosion inhibitors.

Combustion control additive.

PACKING AND SHIPPING INFORMATION.

25 liter Plastic container.

55 US Gallon steel barrel (208 liters).

FLAMMABLE LIQUIDE

Proper Shipping name: Butanols, UN No. 1120 IMO No. 3.3 Page No. 3120 Flash Point 80F.

Labels: Flammable Liquid/Directional Schedule B No. 433.1044

PP 2000 ENGINE PROTECTOR LUBE OIL ADDITIVE PRODUCT SPECIFICATION AND APPLICATIONS.

PP 2000 Engine Protector is a lube oil additive, for internal combustion engine system oil and for the cylinder lubrication. PP 2000 will provide the oil with better oxidation stability.

Reduce internal friction from all moving parts, and increase the mechanical efficiency of a combustion engine.

Reduces temperature of the cylinder liners and provide increased lubrication properties resulting in less metal wear and longer life of piston rings and liners.

Increase the service life of white metal bearings and roller bearings 2 - 3 times than normal.

Maintain the crankcase clean and free from oil sludge deposits.

Maintain the TBN value longer time due to its neutralization effect on sulfur content in the blow pass gases.

The increase of mechanical efficiency by less internal friction will provide a power increase and fuel saving in the order of 3,6%.

Normal dose: At the first time used, add 5 - 6% of the oil volume in the crankcase (or the secondary oil tank for each engine). At any re-fill with more oil add 4% of the new oil volume.

SPECIFICATIONS

Appearance/Odor: Medium brown/slight alcohol smell.

Specific Gravity: Range 1.067 - 1.095 @ 75F

Percent volatile by volume: (%) - 10.0

Solubility in water: Insoluble

Composition: Extreme pressure lubricant.

Blending agents.

Corrosion inhibitor.

Viscosity: 39,1 = 4@ 75F. (Brookfield Viscometer - Model LVF)

Ash: 0,93% = 0,1%@ 77C

Boiling point: (F) 397

Vapor Pressure: (mm Hg) 0,4 mm @ 20C.

Vapor Density: (Air = 1) 5,0

PACKING AND SHIPPING INFORMATION:

25 lit. Plastic container & 55 US Gallon Steel Barrel. (208 lit.)

Labels: NON HAZARDOUS NON FLAMMABLE

PP-C CYLINDER LUBE OIL ADDITIVE

PRODUCT SPECIFICATION AND APPLICATIONS.

PP-C Cylinder lube oil additive, for internal combustion engine cylinder lubrication oil. PP-C Cylinder oil additive will provide the oil with better oxidation stability.

Reduce internal friction from all moving parts, and increase the mechanical efficiency of a combustion engine.

Reduces temperature of the cylinder liners and provide increased lubrication properties resulting in less metal wear and longer life of piston rings and liners.

Maintain the TBN value longer time due to its neutralization effect on sulfur content in the blow pass gases. The increase of mechanical efficiency by less internal friction will provide a power increase and fuel saving in the order of 3,6%.

Normal doze: At the first time used, add 3 - 6% of the oil volume in the service tank for cylinder oil. At any re-fill with more oil add 1 - 3% of the new oil volume. Can be injected into the oil pipe with a dosage pump on the suction side of the lubricator oil pump.

SPECIFICATIONS

Appearance/Odor Medium brown/slight alcohol smell.

Specific Gravity: Range 1.067 - 1.095 @ 75F

Percent volatile by volume: (%) - 10.0

Solubility in water: Insoluble

Composition: Extreme pressure lubricant.

Solvents.

Blending agents.

Corrosion inhibitor.

Viscosity: 39,1 = 4@ 75F. (Brookfield Viscometer - Model LVF)

Ash: 0,93% = 0,1%@ 77C

Boiling point: (F) 397

Vapor Pressure: (mm Hg)0,4 mm @ 20C.

Vapor Density: (Air = 1) 5,0

PACKING AND SHIPPING INFORMATION:

25 lit. Plastic container.

55 US Gallon Steel Barrel. (208 lit.)

Labels: NON HAZARDOUS NON FLAMMABLE

PP-H HYDRAULIC OIL ADDITIVE

PRODUCT SPECIFICATION AND APPLICATIONS.

PP-H Hydraulic oil additive: Add in the hydraulic oil system with the dose 6% at the first time used, and at any re-fill add 4 to 5% of the volume added.

Reduces the internal friction in pumps and motors etc.

Makes all the functions to operate at lower pressure due to less friction losses.

Increased service life of pumps, motors, valves etc.

Increased oxidation stability and prevent corrosion.

SPECIFICATIONS

Appearance/Odor: Medium brown/slight alcohol smell.

Specific Gravity: Range 1.067 - 1.095 @ 75F

Percent volatile by volume (%) - 10.0

Solubility in water Insoluble

Composition: Extreme pressure lubricant.

Solvents.

Blending agents.

Corrosion inhibitor.

Viscosity: 39,1 = 4@ 75F. (Brookfield Viscometer - Model LVF)

Ash: 0,93% = 0,1%@ 77C

Boiling point: (F) 397

Vapor Pressure (mm Hg): 0,4 mm @ 20C.

Vapor Density (Air = 1): 5,0

PACKING AND SHIPPING INFORMATION:

25 lit. Plastic container.

55 US Gallon Steel Barrel. (208 lit.)

Labels: NON HAZARDOUS NON FLAMMABLE

PP-LI (Lubricity Improver for MGO)

European Union (EU) rule mandating consumption of 0.1% sulphur content marine gasoil (MGO) in port, shipowners are investigating all options to ensure that auxiliary diesel engines and boilers will safely accommodate the new fuel. Fortunately, the EU mandate is only for vessels at berth. For vessels calling on California ports, the California Air Resources Board (CARB) now mandates that vessels must operate on a 0.5% sulphur distillate fuel no less than 24 nautical miles (nm) from port, a standard that requires a transition for main engines operating on heavy fuel to the new low sulphur distillate fuel. To what extent are shipowners ready? Are the precautions and procedures issued to date from engine makers and pump manufacturers sufficient for safe and trouble-free operation? And for vessels that are already consuming the 0.1% sulphur fuel what problems, if any, have developed? In this information we will look at these questions and investigate low sulphur MGO, and why the refining process used to produce it, can create serious deficiencies with adverse consequences affecting vessel operation. We will also review widespread misconceptions about the impact of these fuels on proper fuel pump lubrication, and the available remedies. The primary concerns about low sulphur MGO have focused on four areas:

Viscosity: Low sulphur distillates have relatively low viscosity, ranging from 1.5 to 3.0 centistokes (cst). Fuel pumps depend upon an appropriate viscosity to meet required volumetric capacity, an especially important consideration in maintaining proper feed rates to boilers

Lubricity: The 0.1 % sulphur MGO has greatly reduced lubricating value for fuel delivery systems. The naturally occurring lubricating components in heavy fuels, and in 1.5% sulphur distillate fuels, simply do not exist in 0.1 % sulphur MGO fuels – exposing pumping systems to damage and potential catastrophic failure

Lubricating oil: Engines operating on heavy fuels require a higher total base number (TBN) lubricant to address high sulphur content. Unless the lubricant is changed to a lower TBN, engines operating for extended periods on 0.1% MGO still using a high TBN lubricant run the risk of accumulating excessive calcium salt deposits in the combustion chamber, among other damages.

Boiler operation: For vessels with auxiliary boilers, considerable modification to these units must be made, including changes in burners, atomization, and installation of additional fuel pumping and storage equipment. Our focus here is strictly with the first two issues: Viscosity and lubricity. While engine and fuel pump manufacturers still continue to evaluate these areas, most have now issued minimum standards for fuel viscosity and specific recommendations for the process of changing from heavy fuels to MGO during vessel operations.

But many questions remain, and in some discussions, assumptions are still being widely circulated that may possibly put vessels at risk. One common assumption is that it is sulphur, and sulphur only, that is responsible for providing fuel lubricity. A second assumption is that cooling a fuel to elevate viscosity will provide a thicker, oily film on moving parts that will protect fuel pumps and injection equipment from excessive wear.

In the United States, for example, low sulphur diesel fuels have been mandated for automotive use for nearly 20 years, first with a 500 parts per million (ppm) – or 0.05% – sulphur fuel, and now, with a 15 ppm fuel known as ultra low sulphur diesel (ULSD). While low sulphur fuels may be new to international shipping, the operational experience on both high and medium speed diesel engines on these fuels in the US is longstanding. After the 1990 introduction of 500 ppm sulphur fuel in California, serious problems immediately developed. Some fuel injection pumps suffered catastrophic failure. Others experienced excessive wear and severe leakage, with seals shrinking owing to the reduced aromatic content of the fuel.

Our Pacific Petroleum Lubricity Improver (PP-LI), additive for LS Fuel oil and MGO will provide the lubrication properties to the fuel for trouble free performance. The additive is to be added directly into the service tank for MGO with the dose 1 liters per 1000 liters MGO during the first weeks of use. Thereafter the dose can be reduced to 1 liters per 2000 - 4000 liters MGO.

SPECIFICATIONS

Appearance/Odor: Medium brown/slight alcohol smell.

Specific Gravity: Range 1.067 - 1.095 @ 75F

Percent volatile by volume: (%) - 10.0

Solubility in water: Insoluble

Composition: Extreme pressure lubricant.

Blending agents. Corrosion inhibitor.

Viscosity: 39,1 = 4@ 75F. (Brookfield Viscometer - Model LVF)

Ash: 0,93% = 0,1%@ 77C

Boiling point: (F) 397

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