



MAXIMUM STRENGTH LUBRICITY & STABILITY FUEL ADDITIVE

OPTIMUM PROTECTION FOR MGO & VLSFO FUELS

PRI-XL is specifically formulated to provide the optimum level of protection possible for marine fuel pumps and marine engines operating on 0.1% sulfur marine gas oil (MGO) and 0.50% sulfur VLSFO.

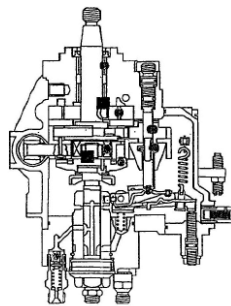
PRI-XL is an “ester based” lubricity chemistry, while also improving the stability of all MGO fuels. This provides an economic but equally powerful tool for vessel owners who demand the very best at a cost-effective price.

Backed by more than 25 years of use in the commercial marine, power generation and automotive industries, **PRI-XL** provides a far broader range and level of protection than is available with the new products only recently rushed to market by marine chemical makers.

Simply, these offerings are formulated based on testing with the standard HFRR lubricity test protocol – a test specifically designed for a vintage 1990s *automotive rotary pump*. Yet marine fuel pumps endure much greater pressures and loads, demanding a far superior shield against wear and failure.

PRI-XL was formulated based on a version of the HFRR test especially modified to directly correlate to the much more demanding internal conditions of *marine fuel pumps*.

1991 - Automotive Rotary Pump



Outlet Pressure: **200 BAR**

2010 - MAN S60 MC-C Pump



Outlet Pressure: **2000 BAR**

And therefore, in test after test, **PRI-XL** consistently outperforms all others, ensuring that marine fuel pumps will continue to function - whether in normal use, or in mission critical situations.

PRI-XL is also *proven safe* in all engines – no injector deposits – no bore polishing – no precipitation; characteristics sometimes associated with other lubricity additive chemistries. 95 percent of our competitors produce mono-acid lubricity additives. **PRI-XL** is an “ester based” lubricity additive, considered the safest and most effective for any engine type.

PRI-XL mixes well with any distillate fuel. Dose rate is 1 liter per 10 mt. For severe fuels in California, we recommend a dosage of 1 liter per 5 mt. **PRI-XL** may be directly added to MGO tanks just prior to bunkering. No costly injection equipment is needed. For optimum protection, **PRI-XL** is truly the only sensible choice.

PRI-XL HFRR Response @ 1:5000



| | Standard HFRR wear scar (microns) | Modified HFRR wear scar (microns) |
|---------------|-----------------------------------|-----------------------------------|
| No Treatment | 658 | 880 |
| Additive A | 616 | 863 |
| PRI-XL | 435 | 468 |

| Specifications | |
|--------------------|--|
| Color & Appearance | Colorless Liquid |
| Boiling Point | 213 C. |
| Flash Point | 65 C. |
| Specific Gravity | 0.78 – 0.81 |
| Water Solubility | Insoluble |
| USA DOT ID Number | UN 1268 |
| Class/Division | Combustible Liquid |
| IMDG | Not classified as dangerous under IMDG regulation |
| IATA | Not classified as dangerous under IATA regulations |

Dosage Rate:

For maximum protection against fuels with scar rates above 600 microns, apply PRI-XL at a dose rate of 1 liter per 5 metric tons. For regular protection from fuels with scar rates of 350-to-600, apply PRI-XL at a dose rate of 1 liter per 10 metric tons.

Dosage Method:

PRI-XL may be directly added to tanks prior to bunkering. Agitation from fuel flow during bunkering will provide a sufficient mixture of PRI-XL with the fuel.

Quality control:

PRI-XL is manufactured in accordance with strict, chemical manufacturing standards. Each blend is numbered, and a retain sample is FTIR tested against a laboratory standard to ensure optimal conformance.

Miscibility:

PRI-XL is a precise blend of organic chemistries that once blended with marine gas oil, will not stratify or separate, even with fuel purification.