



REFINERY GRADE

MGO/MDO TREATMENT FOR LUBRICITY & STABILITY

FOR VLSFO, ULSD & 0.1% SULFUR MGO FUELS

PRI-D is a super concentrated, complete diesel fuel treatment for shipping, refiners, suppliers and commercial diesel consumers that improves all standard distillate grades and is especially formulated to overcome the degraded lubricity and thermal stability characteristics of severely hydrotreated 0.1% MGO marine fuels, VLSFO and ultra-low sulfur (ULSD) diesel fuels.

First, the refinery grade lubricity additive package of **PRI-D** provides a *maximum* level of effective lubricity protection at the 1:2000 dose rate for all fuel delivery systems.

Second, **PRI-D** is formulated with PRI's exclusive thermal stability technology, essential to improving performance of modern, hydrotreated distillate fuels.

PRI-D reacts with fuel upon contact, providing greatly enhanced fuel lubricity and deposit and emissions control benefits demanded by today's engines. The laboratory and field proven benefits are multiple:

- Improved lubricity of 30-40 percent with considerable wear reductions on fuel pumps
- Improved fuel consumption
- Engines and gas turbines are vastly improved
- Carbon deposits on engines and fuel system are prevented
- Fuel stays fresh, ignition quality is improved. Degraded/old fuels are restored.
- Visible smoke emissions and soot fouling is dramatically diminished

Improved Performance, Maintenance, and Emissions Reductions – CARB/EPA testing verifies **PRI-D** capability to improve the combustion process for optimum, long-term engine performance and efficiency. In test after test, **PRI-D** is verified to reduce unburned hydrocarbons, carbon monoxide (CO), particulate matter (PM) and oxides of nitrogen (NOx).

Maximum Lubricity Protection – The refinery-grade “ester based” lubricity additive package of **PRI-D** is the *most effective and safest* available today based on extensive oil industry research, field performance experience and HFRR testing. Fuel pump wear is reduced as much as 45 percent. Costly and unsafe catastrophic pump failures are avoided.

Keeps Fuels at Peak Stability – **PRI-D** not only prevents fuel degradation in long-term storage but degraded fuels are restored to refinery freshness. **PRI-D** is especially effective in providing the enhanced thermal stability that modern hydrotreated distillate fuels lack. **PRI-D** capability is repeatedly confirmed in independently conducted ASTM D2274 testing.

Super Concentrated & Safe – **PRI-D** is super concentrated and cost effective, treating fuel at a 1:2000 ratio. **PRI-D** contains no potentially damaging cetane improvement additives or harsh solvent chemistries, meeting all major engine manufacturer fuel specifications.





Specifications	
Color & Appearance	Colorless Liquid
Odor	Hydrocarbon
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:

PRI-D is dosed at the rate of 1:2000 regardless of fuel specifications under ASTM D975. The fixed dosage rate was developed in consideration of the fact that diesel fuel characteristics can be widely variable, and that quality standards, as proscribed under ASTM D975 do not completely account for all deficiencies associated with fuel performance.

Hence, optimal protection for fuels deficient in lubricity and thermal stability characteristics is ensured at the 1:2000 dosage rate.

Dosage Method:

Power Research Inc. recommends dosing of **PRI-D** at the main bunker manifold by means of a safe and easily operated air driven gear pump arrangement. However, **PRI-D** is highly miscible with diesel fuel and may be also be added directly to tanks no greater than 20 minutes prior to fuel addition. Agitation from fuel flow into the tank typically provides a sufficient mixture.

Quality control:

PRI-D 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-D is a highly complex blend of organic chemistries that once blended with diesel fuel, will not stratify or separate, even with fuel purification. In fact, purification systems remain cleaner and more efficient when processing **PRI-D** treated fuels.