



## THERMAL STABILITY HFO TREATMENT FOR ALL MARINE DIESEL ENGINES USING VLSFO/2020 FUELS

### SOLVING FUEL QUALITY ISSUES WITH VLSFO/2020 FUELS

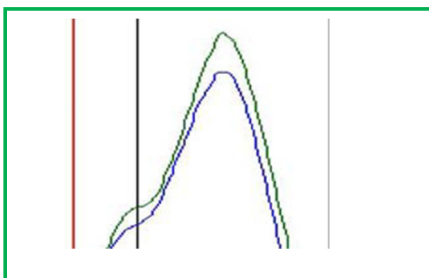
**PRI-27** solves fuel problems. Fuel incompatibility, poor quality fuels, high TSP, purifiers completely shut down, comingling, high asphaltenes, etc.

**PRI-27** is the fuel solution for the new **VLSFO/2020** fuels. Poor fuel stability and compatibility are the top issues affecting vessels worldwide with this fuel. Blended fuels, as most refineries will not be producing this fuel, will be the number one choice for most owners and **PRI-27** is the solution.

Only **PRI** chemicals (**PRI-27**, **PRI-STX**, **PRI-RS** & **PRI-D**) contain specific chemicals to improve fuel stability. This in turn also improves compatibility.

**PRI-27** is a verified technology for optimizing combustion of all VLSFO heavy fuel oil grades in all marine diesel engine types – safely elevating peak combustion pressure (P<sub>MAX</sub>) while reducing post combustion deposits.

#### **PRI-27 INCREASES P<sub>MAX</sub>, REDUCES SPECIFIC FUEL OIL CONSUMPTION**



Verified in testing by Man Diesel under the strict Marpol Annex VI protocol, PRI technology boosts peak firing pressure (P<sub>MAX</sub>) in a range of 4-to-7 bars. With every bar increase, specific fuel oil consumption (SFOC) is reduced 0.25 percent. Diesel engines operating on **PRI-27** fuels typically experience a 0.75-to-1.0 percent reduction in SFOC – providing a dramatic return on investment in fuel cost savings.

#### **PRI-27 PREVENTS DAMAGING, POWER-ROBBING DEPOSITS**

Marpol Annex VI emissions testing and long-term shipboard application verifies that **PRI-27** significantly reduces post combustion deposits, maintaining engine component cleanliness, especially at reduced operating loads. Overhaul intervals are extended, and lube oil life is improved, resulting in enhanced propulsion system efficiency and reliability. *PM (visible smoke emissions) are also reduced approximately 30-40 percent.*

**PRI-27** is also formulated with a special combination of highly concentrated dispersants proven to cut sludge precipitation in a range of 35-to-50 percent, recovering lost fuel value.

#### **PRI-27 REDUCES SLUDGE, RECOVERS LOST FUEL VALUE**

At the standard dosage rate of one liter per 12 mt, **PRI-27** recovers lost fuel value by reducing sludge precipitation as much as 50 percent – protecting fuel delivery systems from excessive wear while permitting more efficient purifier operation.

## ABOUT PRI

PRI advanced technology is the culmination of more than 37 years of research by professional petroleum chemists. The choice of more than 235 vessel owners worldwide and growing, PRI products are safe, precisely formulated blends of highly specialized chemistries, containing only 100 percent active ingredients and no cheap petroleum fillers or iron-based catalysts.

**PROTECT YOUR INVESTMENT - PROTECT YOUR BALANCE SHEET.**

**CALL PRI TODAY.**



Specifications	
Color & Appearance	Dark Amber Liquid
Odor	Hydrocarbon
Boiling Point	213 C.
Flash Point	68 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-27** is dosed at the rate of 1:12,000 regardless of fuel specifications under ISO 8217. The fixed dosage rate was developed in consideration of the fact that heavy fuel oil characteristics can be widely variable, and that quality standards as proscribed under ISO 8217 do not completely account for all deficiencies associated with fuel performance. Optimal protection is ensured at the 1 liter per 12 mt dose rate.

### Dosage Method:

Power Research Inc. suggests that **PRI-27** can be dosed at the main bunker manifold by means of a safe and easily operated air driven gear pump assembly. However, **PRI-27** is highly miscible with heavy fuel oil and may be added directly to fuel tanks 15-30 minutes prior to bunkering. Agitation from fuel flow into the fuel tank typically provides a sufficient mixture.

### Quality Control:

**PRI-27** 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-27** is a highly complex blend of organic chemistries that mix compatibly with heavy fuel and will not stratify or separate during fuel purification. Purification systems remain cleaner and more efficient when processing **PRI-27** treated fuels.