# Ex∕onMobil

## Mobilgard 560 VS

ExxonMobil Marine , Pakistan Diesel Engine Cylinder Oil

### Product Description

Mobilgard<sup>m</sup> 560 VS by ExxonMobil is a high performance, marine diesel engine cylinder oil designed for use in crosshead engines running heavy fuel with sulfur levels from 0.5-4%. This new cylinder lubricant technology provides maximum protection from adhesive and corrosive wear at the higher operating temperatures and pressures found in today's modern crosshead engines. The outstanding performance of Mobilgard 560 VS has been demonstrated at the highest peak firing pressures and liner temperatures.

Mobilgard 560 VS employs additives with greater thermal stability and acid-corrosion protection. It has an optimum viscosity of 20 cSt @ 100°C and low volatility for optimal lubricant distribution and film retention. Through the use of patented technology, the oil's higher viscosity is attained without the use of thermally unstable, deposit-producing bright stock. Unique additive technology at the 60 TBN alkalinity level in Mobilgard 560 VS has demonstrated outstanding ring and liner protection and cleanliness under sustained operation with fuel sulphur levels below 1%.

#### Features and Benefits

Mobilgard 560 VS cylinder oil offers the following features and potential benefits:

Features	Advantages and Potential Benefits
Excellent thermal and oxidation stability	Helps reduce deposits and sludge formation Clean engines reduce the lay-up time required for overhauls
Exceptional antiwear properties	Reduced liner and ring wear helps promote extended periods between overhauls Excellent anti-scuffing control
Outstanding detergency capability	Excellent engine cleanliness increases combustion efficiency Helps miminise deposit formation with use of low sulfur (<1%) fuels
High TBN level and retention	Effectively handles wide fuel sulfur range from 0.5-4.0% at 70 BN equivalent feed rates Helps to maximize protection against the corrosive effects of high sulphur fuels

#### Applications

Mobilgard 560 VS has been developed for marine crosshead engines designed for increased power and fuel efficiency. Mobilgard 560 VS has also demonstrated excellent performance in earlier engine designs and during slow speed steaming operation.

#### Specifications and Approvals

#### This product meets or exceeds the requirements of:

MAN Energy Solutions Copenhagen (Heritage MAN B&W) 2-Stroke engines according to manufacturer's latest operating guidelines

Japan Engine Corporation (Heritage MHI) 2-Stroke engines according to manufacturer's latest operating guidelines

Winterthur Gas and Diesel Engine (Heritage Wartsila & Sulzer) 2-Stroke engines according to manufacturer's latest operating guidelines

#### **Properties and Specifications**

Property	
Grade	SAE 50
Flash Point, Cleveland Open Cup, °C, ASTM D92	248
Kinematic Viscosity @ 100 C, mm2/s, ASTM D445	20
Kinematic Viscosity @ 40 C, mm2/s, ASTM D445	219
Pour Point, °C, ASTM D97	-20
Specific Gravity, 15 C/15 C, ASTM D4052	0.922
Total Base Number, mgKOH/g, ASTM D2896	60
Viscosity Index, ASTM D2270	105

#### Health and safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims /psims.aspx

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Due to continual product research and development, the information contained herein is subject to change without notification. Typical Properties may vary slightly.

