



## Mobilgard™ 540 X

ExxonMobil Marine , Switzerland

High Performance Marine Diesel Engine Cylinder Oil

### Product Description

Mobilgard™ 540 X by ExxonMobil is a premium quality, high-performance marine diesel engine cylinder oil designed to effectively lubricate across wide-ranging applications. The performance of Mobilgard 540 X has been demonstrated at the elevated peak firing pressures and liner temperatures found in modern marine stroke engines, across Residual Fuel Oil, Distillate and Liquefied Natural Gas (LNG) use.

Through the use of advanced formulation and detergency technologies in conjunction with a low Base Number (BN), Mobilgard 540 X has demonstrated the ability to optimise cylinder oil feed-rates whilst effectively managing acid neutralisation and deposit formation in a range of engine types and fuel applications.

Mobilgard 540 X possesses low volatility to ensure excellent lubricant distribution and oil film retention whilst operating at reduced cylinder oil feed rates.

### Features and Benefits

Mobilgard 540 X combines the use of high-quality, globally consistent base stocks with a superb additive formulation to provide exceptional deposit control at increased temperatures and pressures within combustion cylinders, which are particularly prevalent in LNG fuel operation. Mobilgard 540 X also offers outstanding resistance to oxidation, acid formation and wear protection which can lead to reduced component wear rates.

### Applications

Mobilgard 540 X is formulated to provide outstanding performance in marine crosshead engines operating on a wide variety of fuel applications, including conventional LNG use.

### Specifications and Approvals

|                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>This product has the following approvals:</b>                                                                                                                            |
| MAN Energy Solutions Copenhagen (Heritage MAN B&W) Category I for 2-Stroke Marine Engines                                                                                   |
| Winterthur Gas and Diesel Engine (Heritage Wartsila & Sulzer) DF Validated for 2-Stroke Marine Engines                                                                      |
| Winterthur Gas and Diesel Engine (Heritage Wartsila & Sulzer) Liquid Fuel General Usage for 2-Stroke Marine Engines according to manufacturer’s latest operating guidelines |

### Properties and Specifications

| Property                                      |        |
|-----------------------------------------------|--------|
| Grade                                         | SAE 50 |
| Density @ 15.6 C, kg/m3, ASTM D4052           | 930.1  |
| Pour Point, °C, ASTM D97                      | -27    |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 268    |
| Total Base Number, mgKOH/g, ASTM D2896        | 40     |
| Viscosity Index, ASTM D2270                   | 102    |

| Property                                      |     |
|-----------------------------------------------|-----|
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445  | 232 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 20  |

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.as>

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