



## Mobilgard™ M440

ExxonMobil Marine , India

Diesel Engine Oils

### Product Description

Developed specifically for medium-speed engines

Mobilgard™ M440 is a high performance 40 BN engine oil recommended for use on deep-sea vessels, coastal and river ships operating on heavy fuel oil (HFO).

This product provides:

- Excellent high temperature oxidation
- Outstanding residual fuel compatibility
- Good thermal stability
- Low volatility
- High load carrying properties
- Outstanding corrosion protection.

### Corrosion protection

Mobilgard M440's high alkalinity reserves provide superior protection in neutralising the strong acids resulting from the use of high sulphur fuels, reducing corrosion and in turn maintenance and repair costs.

### Unsurpassed engine cleanliness and protection

Mobilgard M440 oil offers excellent BN retention and resistance to viscosity increase, helping to maximise component life and cleaning intervals as well as minimise filter changes and purifier maintenance. It also:

- Helps protect piston under-crowns from deposits caused by raw fuel dilution
- Optimises the life of critical wear surfaces through outstanding anti-wear properties
- Minimises oil consumption thanks to low volatility base stocks

### Features and Benefits

Mobilgard M440 oil has outstanding thermal and oxidation stability. It has excellent TBN retention and resistance to viscosity increases over long operating periods. It also promotes a high level of engine cleanliness with protection against wear. Compared to other medium speed engine oils, it has excellent lube/fuel compatibility and separates easily from water.

When used as recommended, Mobilgard M440 oil provides the following benefits

| Features | Advantages and Potential Benefits |
|----------|-----------------------------------|
|----------|-----------------------------------|

| Features                                  | Advantages and Potential Benefits                          |
|---|--|
| Excellent thermal and oxidation stability | Reduced deposits in piston undercrown and ring belt areas  |
| Improved anti-wear properties             | Extends the life of critical wear surfaces                 |
| Advanced detergency/dispersancy           | Clean camshaft and crankcase spaces                        |
| Outstanding rust and corrosion properties | Protects wear surfaces from water and acidic corrosion     |
| High residual fuel compatibility          | Reduced sludge formation, longer oil life, cleaner engines |
| Low volatility base stocks                | Reduced lubricant consumption                              |
| Excellent TBN reserve and retention       | Combats fuel/combustion related corrosion and deposits     |

### Applications

Mobilgard M440 oil can be used in most medium-speed trunk piston engine applications. It is recommended for use in main propulsion and auxiliary engines on deep-sea vessels; in main propulsion engines on coastal and river ships; and in stationary power plants. This oil is the result of an extensive research and development program, incorporating ExxonMobil's patented DAC (Detecting Asphaltene Contamination) Test.

Mobilgard M440 oil is designed to meet the needs of engines operating on heavy fuel. It is recommended for use in the latest model medium speed diesel engines and are especially beneficial in engines having low crankcase oil consumption or operating with low cylinder liner temperatures. Relatively high alkalinity reserves in this oil provides superior protection in neutralising the strong acids resulting from the use of high sulphur fuels that find access to the crankcase to promote oil degradation and ring, cylinder, and bearing corrosion.

### Properties and Specifications

| Property   |        |
|--|--------|
| Grade  | SAE 40 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92              | 242    |
| Kinematic Viscosity @ 100 C, mm <sup>2</sup> /s, ASTM D445 | 14     |
| Pour Point, °C, ASTM D97                                   | -6     |
| Specific Gravity, 15 C/15 C, ASTM D4052                    | 0.915  |
| Sulfated Ash, wt %, CALCULATED                             | 5      |
| Total Base Number, mgKOH/g, ASTM D2896                     | 40     |

### 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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ExxonMobil Marine Limited  
Ermyn Way  
Leatherhead, Surrey

United Kingdom KT22 8UX

<http://www.exxonmobil.com>

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