



## Mobilgard M20 Series

ExxonMobil Marine , Dem Rep Congo

Diesel Engine Oils

### Product Description

Mobilgard M20 Series by ExxonMobil is a premium, extra high performance 20 TBN engine oil series designed for use in the residual, distillate and LNG-fuelled medium-speed diesel engine applications found in marine and stationary power industries.

Mobilgard M20 Series is an extension to the outstanding ExxonMobil Mobilgard M Series trunk piston engine oils and is specifically formulated to support the transition to lower Sulphur fuels in light of fuel regulations.

High performance additive detergent technology is utilised to provide outstanding residual fuel-lube compatibility characteristics for enhanced engine cleanliness, especially in crankcase compartments, camshaft areas, piston ring and under-crown areas.

Mobilgard M20 series oils also demonstrate excellent high temperature oxidation and thermal stability, low volatility, high load carrying properties and corrosion protection across a wide range of fuel grades.

### Features and 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 M20 Series oils can be used in most medium-speed trunk piston engine applications. They are 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 new Series of oils is the result of an extensive research and development program, incorporating ExxonMobil's patented DAC (Detecting Asphaltene Contamination) Test.

Mobilgard M20 Series is specifically formulated for use in medium speed engines using 0.50% and 0.10% sulphur fuels and liquefied natural gas (LNG) due to its low BN formulation. They are 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.

### Specifications and Approvals

| This product has the following approvals:  | MOBILGARD M320 | MOBILGARD M420 |
|--|----------------|----------------|
| MAN Energy Solutions Augsburg (Heritage MAN B&W) 4 Stroke medium speed engines for Alternating HFO / LNG operation | X              | X              |

| <b>This product has the following approvals:</b>   | <b>MOBILGARD M320</b> | <b>MOBILGARD M420</b> |
|--|-----------------------|-----------------------|
| MAN Energy Solutions Augsburg (Heritage MAN B&W) 4 Stroke medium speed engines for HFO operation | X                     | X                     |

| <b>This product meets or exceeds the requirements of:</b> | <b>MOBILGARD M320</b> | <b>MOBILGARD M420</b> |
|---|-----------------------|-----------------------|
| WARTSILA* No Objection (letter on file)                   |                       | X                     |

### Properties and Specifications

| <b>Property</b>  | <b>MOBILGARD M320</b> | <b>MOBILGARD M420</b> |
|--|-----------------------|-----------------------|
| Grade  | SAE 30                | SAE 40                |
| Density @ 15 C, kg/l, ASTM D4052                           | 0.902                 | 0.902                 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92              | 255                   | 271                   |
| Kinematic Viscosity @ 100 C, mm <sup>2</sup> /s, ASTM D445 | 10.8                  | 14                    |
| Kinematic Viscosity @ 40 C, mm <sup>2</sup> /s, ASTM D445  | 90                    | 134                   |
| Pour Point, °C, ASTM D97                                   | -12                   | -15                   |
| Total Base Number, mgKOH/g, ASTM D2896                     | 20                    | 20                    |
| Viscosity Index, ASTM D2270                                | 101                   | 102                   |

### 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.

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