



## Mobilgard™ 410 NC

ExxonMobil Marine , San Marino

Marine Crankcase Oil

### Product Description

Mobilgard 410 NC (No Chlorine) engine oil is a non-zinc and non-chlorine lubricant specifically formulated with a Progress Rail (EMD) and General Electric (GE) endorsed additive technology to meet requirements of heavily loaded diesel engines manufactured by EMD and used in marine applications.

Its alkalinity reserve provides excellent corrosion protection when using fuels containing up to 0.05 wt.% sulfur, even though metals such as steel, copper, silver, and bronze are present. It has excellent lubricating properties and has high viscosity index to help reduce oil consumption and is optimized for low and ultra-low sulfur fuel use and is LNG, biofuel, and Tier IV engine ready.

### Features and Benefits

Mobilgard 410 NC was developed by ExxonMobil to meet performance requirements of Tier IV engines.

Engineered to combat sludge and deposits formation while extending oil life in intermittent marine services, providing clean, smooth-running engines. Advanced dispersant technology provides high soot loading capability leads to excellent cleanliness in engines with lower lube oil consumption rates.

Formulated to improved anti-wear protection and load carrying properties, helps to protect critical wear surface and extend engine life. Optimized TBN and sulfated ash content for use with low and ultra-low sulfur diesel fuel and is biofuel and LNG ready.

| Features                              | Advantages and Potential Benefits                      |
|---------------------------------------|--|
| High thermal and oxidation stability. | Extended oil drain intervals.                          |
| Excellent TBN reserve and retention.  | Combat fuel/combustion related corrosion and deposits. |
| Effective wear protection.            | Reduce wear to prolong engine life.                    |
| Advanced dispersant technology        | Lower lube oil consumption rates.                      |

### Applications

- Heavily loaded diesel engines manufactured by EMD/GE and used in marine applications.
- Marine diesel engines of the highest horsepower, or higher brake mean effective pressure (BMEP) using distillate fuels with a sulfur content up to 0.05 wt.%
- Diesel engines manufactured by Alco, Detroit Diesel, and Fairbanks Morse

### Specifications and Approvals

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| <b>This product has the following approvals:</b>   |
| LMOA Gen 7 - Fundamental Approval (letter on file) |

**This product has the following approvals:**

Progress Rail Worthy of Field Test (recognition letter on file)

**Properties and Specifications**

| Property   |        |
|--|--------|
| Grade  | SAE 40 |
| Flash Point, °C, ASTM D92                                  | 266    |
| Ash, Sulfated, mass%, ASTM D874                            | 1.1    |
| Viscosity Index, ASTM D2270                                | 104    |
| Pour Point, °C, ASTM D97                                   | -24    |
| Zinc, mg/kg, ASTM D5185                                    | <0.5   |
| Density @ 15 C, kg/l, ASTM D4052                           | 0.897  |
| Kinematic Viscosity @ 100 C, mm <sup>2</sup> /s, ASTM D445 | 15.2   |
| Base Number, mgKOH/g, ASTM D2896                           | 11     |
| Kinematic Viscosity @ 40 C, mm <sup>2</sup> /s, ASTM D445  | 148    |

**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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