



## Mobilgard™ HSD+ 15W-40

ExxonMobil Marine , Kazakhstan

High Performance Diesel Engine Oil

### Product Description

Mobilgard™ HSD+ 15W-40 is an advanced, multi-grade diesel engine oil that help extend engine life and is formulated for severe service high-speed diesel engines in marine applications.

Mobilgard™ HSD+ 15W-40 meets or exceeds many original equipment manufacturer (OEM) requirements and delivers high performance.

Fully backward compatible, Mobilgard™ HSD+ 15W-40 delivers exceptional performance in both newer and older heavy duty engine designs. Accordingly, these oils meet or exceed the requirements of API CK-4 service categories, as well as key OEM requirements.

Mobilgard™ HSD+ 15W-40 uses a tailored formulation that delivers excellent wear and engine protection, extended drain capability, outstanding high temperature performance and engine cleanliness. Developed in close collaboration with major OEMs, Mobilgard™ HSD+ 15W-40 is recommended for use in a wide range of heavy duty applications and in the most severe marine environments. This product provides outstanding protection in the most demanding diesel engines of Caterpillar, Cummins, Detroit, Mercedes Benz, MAN, Volvo, and others.

### Features and Benefits

Mobilgard™ HSD+ 15W-40 is formulated with optimized base oil technology, containing severely hydro-processed base stocks and a tailored additive system to deliver extended performance for up to 50% beyond OEM-recommended oil drain intervals (ODIs)\*. This proprietary formulation delivers excellent wear protection, outstanding oxidation stability, and outstanding TBN retention. Mobilgard™ HSD+ 15W-40 also provides outstanding resistance to oil consumption, oxidation, corrosive and abrasive wear, and high temperature deposits.

\* Results may vary based on vessel/engine condition, load and environmental conditions. Consult OEM or ExxonMobil before implementing extended ODIs.

The key benefits include:

Features	Advantages and Potential Benefits
Meets demanding specifications of key OEMs	One engine oil for mixed fleet operations
Outstanding oxidation stability	Extended ODI capability. Reduced low temperature sludge build-up and high temperature deposits
Excellent soot and viscosity control	Greater engine efficiency, long engine life and long oil life
Excellent oil consumption control	Lower oil costs due to less make-up oil during operation
Outstanding TBN reserves	Corrosion protection and extended drain intervals for both new and old engines using up to 500 ppm sulphur diesel fuel
Resistance to corrosive and abrasive wear	Long life of critical wear surfaces
Component compatibility	Long gasket and seal life
Low ash formulation meeting API CK-4 requirements	Long emissions aftertreatment life (DPF, DOC and SCR)

### Applications

- Recommended for the latest heavy duty diesel engines, including those equipped with aftertreatment systems and EGR.
- Provides outstanding performance in the most severe service marine applications of modern high-speed diesel engines
- Recommended for diesel applications using older and naturally aspirated conventional designs.
- Diesel-powered equipment from American, European and Japanese OEMs.

### Specifications and Approvals

<b>This product has the following approvals:</b>
Detroit Fluids Specification 93K218
Detroit Detroit Fluids Specification 93K222
MACK EOS-4.5
MAN M 3275-1
MAN M 3575
MB-Approval 228.31
VOLVO VDS-4.5
ZF TE-ML 04C

<b>This product meets or exceeds the requirements of:</b>
API CK-4
Cummins CES 20081
Cummins CES 20086
Caterpillar ECF-3

### Properties and Specifications

<b>Property</b>	
Grade	SAE 15W-40
Kinematic Viscosity @ 40 C, mm <sup>2</sup> /s, ASTM D445	109
Kinematic Viscosity @ 100 C, mm <sup>2</sup> /s, ASTM D445	14.1
Viscosity Index, ASTM D2270	130
Density @ 15 C, g/ml, ASTM D1298	0.875
Pour Point, °C, ASTM D97	-33

Property	
Flash Point, Cleveland Open Cup, °C, ASTM D92	225
Ash, Sulfated, mass%, ASTM D874	0.9
Total Base Number, mgKOH/g, ASTM D2896	9.8

### 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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