



PRODUCT SPECIFICATIONS & TECHNICAL DATA

15W-40 Ci-4 SYNTHETIC BLEND MOTOR OIL HD

HEAVY DUTY 15W-40 Synthetic Blend Diesel Engine Oil is a premium quality, high performance, fleet engine oil designed for use in on-highway diesel trucks and off-highway diesel equipment, as well as in passenger cars and light trucks with either diesel or gasoline engines. It is recommended for use both in EGR-equipped diesel engines and in older, non-EGR diesel engines. It also will provide excellent protection for gasoline engines for use in mixed commercial fleets.

Synthetic Blend 15W-40 HD, is formulated with advanced additive technology to provide outstanding wear protection and bearing corrosion protection. High dispersancy-detergency and a high alkaline reserve (TBN) provide extra protection in extended drain or severe service intervals, and in EGR-equipped engines.

APPLICATIONS

- On-highway diesel trucks equipped with cooled-EGR, ACERT or other technologies to meet earlier exhaust emission standards
- Older diesel equipment with conventional, non-EGR engines
- Mixed fleets with both diesel and gasoline-fueled vehicles
- Off-highway construction, earth moving and mining equipment
- Farm equipment with diesel or gasoline engines

Synthetic Blend 15W-40 HD Motor Oil meets /exceeds the requirements of:

- API Service CI-4, CI-4 PLUS, CH-4, CG-4, CF-4, CF, SL
- ACEA E7-04, E5-02, E3-96
- Caterpillar ECF-2, ECF-1a
- Cummins CES 20078, CES 20077
- Detroit Diesel Power Guard 93K214
- Global DHD-1
- Mack EO-N Premium Plus 03
- MAN 271, 3275
- Mercedes-Benz Sheet 228.3
- MIL-PRF 2104
- MTU MTL 5044 Type 2
- Volvo VDS-3

Diesel engines manufactured by OEMs not listed above, including International (Navistar), John Deere, Hino, Komatsu, Kubota and others.



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FEATURES & BENEFITS

- Outstanding soot control for protection against abrasive wear and soot induced oil thickening
- Excellent resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Excellent wear protection
- High shear stability
- Excellent rust and bearing corrosion protection
- Good low-temperature pumpability
- Good resistance to foaming and aeration
- Extended drain capability for non-EGR diesel engines

TYPICAL PROPERTIES

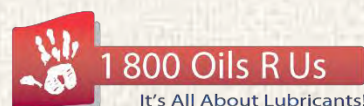
SAE 15W40 HD SYNTHETIC BLEND MOTOR OIL

Specific Gravity @ 60°F	0.88
Density, lbs/gal @ 60°F	7.34
Color, ASTM D1500	L 4.0
Flash Point (COC), °C (°F)	221 (430)
Pour Point, °C (°F)	-25 (-32)
Viscosity, Kinematic	
cSt @ 40°C	115
cSt @ 100°C	15.2
Viscosity Index	145
Cold Cranking Viscosity, cP @ -20°C	6,500
High-Temp/High-Shear Viscosity, cP @ 150°C	4.3
Sulfated Ash, ASTM D874, wt %	0.9
Total Base Number (TBN), ASTM D2896	10.0
Zinc, wt %	0.15

The values quoted above are typical of current production and do not constitute a specification.

Minor variations that do not affect product performance are to be expected during normal manufacture.

Due to continual product research and development the product formulations are subject to change without notifications.



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LABELS