



Super-D XA™ Diesel Engine Oil

Kendall® Super-D XA (eXhaust Advantage) is a premium quality, synthetic blend, API CJ-4 engine oil developed for use in four-stroke cycle diesel engines compliant with the U.S. EPA's 2007 on-highway exhaust emissions standards. It is specially formulated to protect exhaust aftertreatment devices such as diesel particulate filters (DPF) and diesel oxidation catalysts (DOC). It also is recommended for use in pre-2007 on- and off-highway diesel equipment with either EGR or conventional diesel engines, and for mixed fleets with diesel and gasoline-fueled vehicles.

Super-D XA is formulated with a blend of synthetic and high-quality Group II base stocks and a proprietary low-SAPS additive package to provide outstanding engine protection in new and older diesel engines. It is fortified with our exclusive Liquid Titanium™ additive technology for enhanced oxidation resistance and protection against wear. This additive enhancement provides increased engine protection from a strongly bonded titanium shield formed on the surface of critical engine parts, which reduces wear and helps extend component life.

Super-D XA has excellent soot dispersancy to protect against abrasive wear and soot-induced oil thickening, and to ensure good low-temperature pumpability even with highly soot-laden oil. It provides excellent bearing corrosion protection and protects against sludge and varnish formation. The synthetic blend formulation provides enhanced thermal stability at high temperatures and improved low-temperature properties compared with conventional diesel engine oils.

Super-D XA meets or exceeds the performance requirements of API Service Categories CJ-4 and SM, and all major OEM heavy-duty engine oil specifications for 2007 and later on-highway diesel engines. It also is back-serviceable for use in older diesel engines where oils meeting previous API Service Categories or OEM specifications are specified. It is formulated for use in diesel engines operating on diesel fuels with sulfur content up to 500 ppm. However, for applications not using Ultra-Low Sulfur Diesel (ULSD), consult the engine manufacturer for recommended service interval.

**Premium Synthetic
Blend API CJ-4
Diesel Engine Oil
With Liquid
Titanium™**



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Applications

- On-highway diesel trucks equipped with exhaust aftertreatment devices, such as diesel particulate filters and oxidation catalysts
- Diesel engines equipped with exhaust gas recirculation (EGR) or other NO_x-reduction technologies
- Older diesel equipment with conventional, non-EGR engines
- Off-highway construction, earth moving and mining equipment
- Mixed fleets with diesel and gasoline-fueled vehicles

Super-D XA meets or exceeds the requirements of:

- API Service CJ-4, CI-4, CH-4, CG-4, CF-4, SM
- API CI-4 PLUS (SAE 15W-40)
- ACEA E7-04, E5-02, E3-96 (SAE 15W-40)
- Caterpillar ECF-3, ECF-2, ECF-1a
- Cummins CES 20081
- Detroit Diesel Power Guard 93K218 (SAE 15W-40)
- International (Navistar) diesel engines
- Mack EO-O Premium Plus (SAE 15W-40), EO-M Plus (both grades)
- Mercedes-Benz Sheet 228.3 (SAE 15W-40)
- Renault VI RLD-3 (SAE 15W-40)
- Volvo VDS-4, VDS-3, VDS-2 (SAE 15W-40)

Features/Benefits

- Exclusive Liquid Titanium[™] additive technology for enhanced oxidation resistance and protection against engine wear
- Excellent protection for new 2007 emissions-compliant engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment devices
- Outstanding soot control for protection against abrasive wear and soot-induced oil thickening
- Outstanding resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against rust and bearing corrosion
- Excellent low-temperature pumpability with soot-laden oil
- High shear stability
- Good resistance to foaming and aeration

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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Super-D XA™ Diesel Engine Oil**Typical Properties**

SAE Grade	10W-30	15W-40
Specific Gravity @ 60°F	0.871	0.876
Density, lbs/gal @ 60°F	7.26	7.31
Color, ASTM D1500	L 4.0	4.0
Flash Point (COC), °C (°F)	226 (439)	229 (444)
Pour Point, °C (°F)	-40 (-40)	-36 (-33)
Viscosity, Kinematic		
cSt @ 40°C	79.0	115
cSt @ 100°C	12.2	15.3
Viscosity Index	144	139
Cold Cranking Viscosity, cP	6,300	6,200
@ (°C)	(-25)	(-20)
High-Temp/High-Shear Viscosity, cP @ 150°C	3.6	4.4
Sulfated Ash, ASTM D874, wt %	0.95	0.95
Total Base Number (TBN), ASTM D2896	9.5	9.5
Titanium, wt %	0.010	0.010
Zinc, wt %	0.126	0.126

Health and Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://w3.conocophillips.com/NetMSDS>.

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