



## Super-D XA<sup>®</sup> Diesel Engine Oil

Kendall<sup>®</sup> 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 designed to meet 2007 and later EPA on-highway exhaust emissions standards. It is specially formulated to protect exhaust aftertreatment devices such as diesel particulate filters (DPF), diesel oxidation catalysts (DOC) and selective catalytic reduction (SCR) systems. It is backward serviceable for use in pre-2007 diesel engines, and may be used in mixed fleets with both 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<sup>®</sup> protection additive 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 SN, and is approved under the latest OEM specifications for use in low-emission diesel engines. It is formulated for use in diesel engines operating on diesel fuels with sulfur content up to 500 ppm. However, for use with non-ULSD (Ultra-Low Sulfur Diesel) fuels with sulfur content greater than 15 ppm, consult the engine manufacturer for recommended service interval.

### **Applications**

- On-highway diesel trucks equipped with EGR and exhaust aftertreatment devices to meet 2007/2010 emissions standards
- Older diesel equipment with conventional, non-EGR engines or ACERT engines

**Premium Synthetic  
Blend API CJ-4  
Diesel Engine Oil;  
Fortified With  
Liquid Titanium<sup>®</sup>  
Protection Additive**



U.S. Customer  
Service:

**1-800-368-7128**

Technical Hot Line:

**1-877-445-9198**

International  
Customer Service:

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- 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 with CI-4 PLUS, CI-4, CH-4, SN
- ACEA E9-08, E7-08 (SAE 15W-40)
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Chrysler MS-10902 (SAE 15W-40)
- Cummins CES 20081
- Detroit Diesel Power Guard 93K218 (SAE 15W-40)
- Ford WSS-M2C171-E
- International (Navistar) diesel engines
- JASO DH-2 (SAE 15W-40)
- Mack EO-O Premium Plus (SAE 15W-40), EO-M Plus (both grades)
- Mercedes-Benz Sheet 228.31, 228.3 (SAE 15W-40)
- MTU MTL 5044 Type 2.1 (SAE 15W-40)
- Renault VI RLD-3 (SAE 15W-40)
- Volvo VDS-4, VDS-3, VDS-2 (SAE 15W-40)
- Diesel engines manufactured by OEMs not listed above, where the OEM specifies API CJ-4 engine oil

### **Features/Benefits**

- Excellent protection for newer low-emission diesel engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment devices
- Exclusive Liquid Titanium® protection additive provides enhanced oxidation resistance and protection against engine wear
- 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

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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**

<b>SAE Grade</b>	<b>10W-30</b>	<b>15W-40</b>
Specific Gravity @ 60°F	0.872	0.877
Density, lbs/gal @ 60°F	7.26	7.30
Color, ASTM D1500	L 4.0	4.0
Flash Point (COC), °C (°F)	226 (439)	229 (444)
Pour Point, °C (°F)	-40 (-40)	-40 (-40)
Viscosity, Kinematic		
cSt @ 40°C	79.0	117
cSt @ 100°C	12.2	15.3
Viscosity Index	144	139
Cold Cranking Viscosity, cP	6,300	6,000
@ (°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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