

High Performance Synthetic Heavy-Duty Diesel Engine Oil



Product Description

Delo® 400 XSP-SD SAE 5W-30 with ISOSYN® Advanced Technology is a high-performance synthetic "low-SAPS" (sulfated ash, phosphorus and sulfur) heavy-duty diesel engine oil which meets industry and engine manufacturers' performance requirements. It is specifically designed to lubricate a wide range of high-speed diesel engines requiring API CK-4, CJ-4, CI-4 PLUS / SN, or ACEA E6 performance lubricants operating under the most severe service conditions with potential fuel economy benefits.

It is formulated using our most advanced additive technology to provide outstanding protection for on-highway applications, including 2017 greenhouse gas-compliant (GHG 17) diesel engines with lower CO2 emissions and improved fuel economy, in addition to EPA 2017 compliant low emission diesel engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems.

Customer benefits and product features

Customer benefits

Helps minimize fleet operating costs

Excellent deposit control on valves and piston crownlands helps reduce oil consumption. Exceptional oxidation stability and soot control assist in providing extended oil drain capability, so that equipment is in service longer. Potential improvement in Fuel Economy as compared to conventional SAE 15W-40 oils due to lower HTHS (high temperature high shear viscosity) and improved low temperature fluidity which helps reduce energy consumption at start-up. Can contribute to maximized vehicle utilization and minimized downtime.

• Helps reduce inventory costs

Formulation provides excellent overall performance in mixed fleets of different engine designs, (including modern low emission diesel engines) allowing one oil for many services and helps reduce the chance of product misapplication. Backward compatible with previous API Oil Service Categories and engine models.

· Helps minimize fleet maintenance costs

Exceptional soot dispersancy keeps fuel soot in suspension, assists in minimising filter plugging, cylinder head sludge, abrasive polishing wear and oil thickening. Helps improve equipment durability and reliability.

• Low Temperature Protection

Low viscosity synthetic base stock promotes consistent cold engine starting for gasoline and diesel engines operating in low temperatures, thus helping to protect against start-up wear.

Low SAPS formulation

Formulated with latest generation "low-SAPS" technology, it helps maximize the life of sensitive catalyst metals and the cleaning intervals of diesel particulate filters.



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Applications

- Mixed fleets of European, North American and/or Japanese OEMs with diesel engines.
- Commercial road transport, including the latest engines fitted with exhaust cleanup devices
- Vehicles meeting the most recent exhaust emissions standards, including US EPA 2002, 2007 and 2010, 2017 greenhouse gas (GHG 17) Euro IV, V and VI, and Australian ADR 80/02 and ADR 80/03 (for heavy duty)
- Mixed fleets of both diesel and gasoline engines, and both old and new equipment
- Stop-and-go vehicles in high soot loading service such as buses and waste collection trucks
- Many diesel engine light duty vehicles
- Off-highway vehicles and plants including agricultural equipment and generator sets.
- Many heavy-duty gas-fuelled vehicles

Product approvals, performance, and recommendations

Performance standards

- API CK-4, CJ-4, CI-4 PLUS, CI-4, CH-4 / SN
- Cummins CES 20086
- Daimler MB-Approval 228.51 and MB-Approval 228.52
- Detroit Fluids Specification (DFS) 93K222
- Mack EOS 4.5
- MAN M3677, M 3691
- MTU Category 3.1
- Renault Trucks VI RLD-3
- Scania LDF-4
- Volvo VDS-4.5

Developed independently by Chevron to meet the following specifications:

- ACEA E6, E7, E9
- Caterpillar ECF-3
- DAF Extended Drain (Euro IV & Euro V MX engines and in Euro VI MX & PX engines)
- Daimler MB-Approval 228.31
- DEUTZ DQC IV-18 LA (approval pending)
- Ford WSS-M2C213-A1
- JASO DH-2
- MAN M3477
- Scania Low Ash
- Volvo VDS-4, Mack EOO-O Premium Plus, Renault RLD-2

Consult OEM representatives for independent verification, updates and recommendations.



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Product approvals, performance, and recommendations continued...

Service considerations

"Low SAPS" engine oils tend to have lower Base Numbers than "conventional" heavy duty diesel engine oils. Used in conjunction with today's low, very low or ultra-low sulfur content fuels this is of no consequence. However, in situations where very high sulfur (>0.2%) fuels are in use this may, limit achievable drain intervals. Fuel sulfur levels have declined significantly over the past decade but are still relatively high in some countries.

For applications where fuel Sulfur is higher, other products from the Caltex range like Delo[®] 400 MGX SAE 15W-40 are recommended.

While the level of phosphorus is low by heavy duty diesel engine oil standards, it is somewhat higher than permitted by certain recent standards for passenger car motor oils, e.g. ILSAC GF-6, and the ACEA "C" standards. Optimum life of catalytic emission control systems will be achieved by using oils of the performance standard recommended by the vehicle manufacturer.

Always follow OEM recommendation for appropriate fuel and engine oil selection.



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Typical Test Data

DELO [®] 400 XSP-SD SAE 5W-30	TEST METHOD	RESULT
SAE Grade		5W-30
Product Code		500867
Base No., mg KOH/g	D2896	10
Phosphorus, m %		0.08
Sulfated Ash, m %	D874	0.9
Viscosity,		
mm²/s @ 40°C	D445	75
mm²/s @ 100°C	D445	12.2
Viscosity Index	D2270	163

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended. Produced by Chevron Global Lubricants: Asia Pacific.

ENVIRONMENT, HEALTH and SAFETY. Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit the <u>Product Information Center</u>.

This Product Data Sheet (PDS) was produced for the Asia Pacific region based on the best available information at the time of issue. The specific information included may not directly reflect the market or conditions, and may vary. For the most up-to-date, country-specific information, please contact your local customer service center.