



Delo® 400 LE

"Universal" Heavy Duty Diesel Engine Oil

Product Data Sheet

Customer benefits

Minimizes fleet maintenance costs

Exceptional soot dispersancy keeps fuel soot in suspension, minimizing filter plugging, cylinder head sludge, abrasive polishing wear and oil thickening.

Reduced emissions

Formulated with latest generation "low-SAPS" (sulfated ash, phosphorus and sulfur) technology containing reduced levels of metals, phosphorus and sulfur, it maximizes the life of sensitive catalyst metals and the cleaning intervals of diesel particulate filters.

Minimizes fleet operating costs

Excellent deposit control on valves and piston crownlands reduces oil consumption. Exceptional oxidation stability and soot control provides extended oil drain capability so that equipment is in service longer generating revenue.

Reduces inventory costs

"Universal" 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 reducing the chance of product misapplication.

Applications

- Mixed fleets of European, North American and/or Japanese diesel engines.
- Commercial road transport, including the latest engines fitted with exhaust cleanup devices of all types.
- Vehicles meeting the most recent exhaust emissions standards, including US EPA 2002 and 2007, Euro IV, V and VI, and Australian ADR 80/02 (for medium duty) 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
- Most diesel engined light duty vehicles
- Off-highway vehicles and plant
- Many heavy duty gas-fueled vehicles
- Mobile hydraulic systems (where oil type and viscosity are appropriate)

Product features:

- Delo® 400 LE is a premium performance, "low-SAPS" heavy-duty diesel engine oil specifically designed to lubricate a wide range of high speed diesel engines requiring API CJ-4, CI-4 PLUS, SM, or ACEA E9 performance lubricants operating under the most severe service conditions.
- Delo® 400 LE is specifically designed for the latest low emission diesel engines fitted with diesel particulate filters, but also those fitted with EGR and/or SCR systems.
- Delo® 400 LE is formulated with ISOSYN® base oils and the latest low-ash additive technology to provide exceptional soot dispersancy, deposit control and wear protection.



Typical key properties

DELO® 400 LE	
SAE Grade	15W-40
Product Code	500528
Base No.,	
D2896, mg KOH/g	9.3
D4739, mg KOH/g	7.0
Phosphorus, m %	0.12
Sulfated Ash, m %	1.0
Sulfur, m %	0.32
Viscosity,	
mm ² /s @ 40°C	132
mm ² /s @ 100°C	15.7
Viscosity Index	125
Zinc, m %	0.13

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: www.CaltexDelo.com.

Performance standards

1401

- API CJ-4, CI-4 PLUS, CI-4, CH-4 / SM
- ACEA E9, E7
- Caterpillar ECF-3, ECF-2
- Daimler MB-Approval 228.31
- MTU Category 2.1
- Mack EO-O Premium Plus 07
- MAN M 3575
- Cummins CES 20081
- Volvo VDS-4
- Detroit Diesel DDC Power Guard 93K218
- Renault RLD-3
- DEUTZ DQC III-10 LA

Meets the Requirements of

- JASO DH-2
- API CF
- ACEA E5-02, E3-96
- Ford WSS-M2C171-E

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 Lubricants

– Asia Pacific



Performance standards (Cont.)

Caterpillar 3600 Series engines - Delo 400 LE SAE 15W-40 has successfully completed a 7000 hour field trial in Caterpillar 3612 engines with used oil analysis and engine inspections.

MTU Series 4000 T94/T94L engines - Resulting from satisfactory field trial performance, Delo 400 LE SAE 15W-40 is approved by MTU for Series 4000 T94/T94L engines in oil and gas fracking applications (North America only). This is the first MTU Category 2.1 approved oil for this application that typically requires a Category 3.0 or 3.1 approval.

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 (>0.5%) fuels are in use this may to some extent limit achievable drain intervals. Fuel sulfur levels have declined significantly over the past decade but are still relatively high in some countries.

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-5, 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.

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