



Delo[®] 400 Multigrade

"Universal" Diesel Engine Oil

Product Data Sheet

Customer benefits

Minimizes fleet maintenance costs

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

Minimizes fleet operating costs

Excellent deposit control on valves and piston crownlands reduces oil consumption. Exceptional oxidation stability and soot control extends oil drain capability so that equipment is in service longer generating revenue. Outstanding valve train wear protection maintains fuel economy.

Extends engine life to overhaul

High level of anti-wear additive protects against valve train wear and scuffing of highly loaded parts operating under boundary lubrication conditions.

Reduces inventory costs

"Universal" formulation provides excellent overall performance in mixed fleets of different engine designs, (including modern electronically controlled/low emission diesel engines) allowing one oil for all services and reducing the chance of problems arising through product misapplication.

Applications

- Mixed fleets of European, North American and / or Japanese diesel engines (high speed, four-stroke, turbocharged or naturally aspirated)
- Mixed fleets of both diesel and gasoline engines
- Mixed fleets including both old and new equipment
- Commercial road transport, including electronically controlled engines fitted with Selective Catalytic Reduction (SCR) and / or Exhaust Gas Recirculation (EGR) emission control technologies
- Diesel engines meeting Euro V or earlier emission requirements not fitted with Diesel Particulate Filters (DPF)
- Stop-and-go vehicles in high soot loading service such as buses and waste collection trucks
- Off-highway vehicles and plant
- Diesel engines utilizing diesel fuels with up to 20% biodiesel (B20)
- Agricultural tractors and farm machinery
- Generator sets
- Mobile hydraulic systems (where oil type and viscosity are appropriate)

Product features:

- Delo[®] 400 Multigrade is a premium performance, multigrade, heavy-duty diesel engine oil specifically designed to lubricate a wide range of diesel engines requiring API CI-4 PLUS, CI-4, ACEA E7 or JASO DH-1 performance lubricants operating under the most severe service conditions.
- Delo[®] 400 Multigrade is specifically designed for the electronically controlled diesel engines, including those fitted with EGR and/or SCR systems.
- Delo[®] 400 Multigrade is formulated with ISOSYN[®] technology to provide exceptional soot dispersancy, deposit control and wear protection.
- Delo[®] 400 Multigrade is an excellent product offering for customers who utilize diesel fuels with up to 20% biodiesel (B20) in them. The product has been tested in various diesel equipment and shown excellent performance and parts protection when used in diesel engines with this level of biodiesel.



Typical key properties

DELO®400 MULTIGRADE	
SAE Grade	15W-40
Product Code	500499
Base No.,	
D2896, mg KOH/g	12.2
D4739, mg KOH/g	10.1
Sulfated Ash, m %	1.4
Phosphorus, m %	0.13
Viscosity,	
mm ² /s @ 40°C	125
mm ² /s @ 100°C	15.1
Viscosity Index	125
Zinc, mass %	0.15

1603

Performance standards

- API CI-4 PLUS, CI-4, CH-4 / SL
- ACEA E7
- Caterpillar ECF-2, ECF-1-a
- Cummins CES 20078, 20077, 20076
- Daimler MB-Approval 228.3
- Detroit Diesel DDC Power Guard 93K214
- DEUTZ DQC III-10
- Global DHD-1
- Mack EO-N Premium Plus 03
- MAN M 3275-1
- MTU Category 2
- Renault RLD-2
- Volvo VDS-3
- ZF TE-ML 04C

Meets the Requirements of

- API CG-4, CF-4, CF, CD
- ACEA E5-02, E3-96
- Cummins CES 20072
- JASO DH-1
- Mack EO-M Plus, EO-M

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.

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



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Service Considerations

For diesel engines utilizing diesel fuels with up to 20% biodiesel (B20), conducting in-service oil monitoring (used oil analysis) is recommended. Please also follow OEM recommendations on the use of biodiesel in the engine.

For vehicles fitted with diesel particulate filters (DPFs), Delo 400 LE or Delo XLE Multigrade should be selected in accordance with the manufacturer's recommendations. The use of these low SAPS (sulfated ash, phosphorus and sulfur) products will maximize intervals between filter cleaning.

While modest by typical heavy duty diesel standards, Delo 400 Multigrade has a level of phosphorus 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.

This product is not recommended for motorcycle engines.

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