



# DELO<sup>®</sup> 400 LE

## SAE 15W-40

### PRODUCT DESCRIPTION

"Delo. Let's go further.<sup>®</sup>"

Delo<sup>®</sup> 400 LE SAE 15W-40 is a mixed fleet motor oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CJ-4 service category and SAE 15W-40 viscosity grade are recommended.



### CUSTOMER BENEFITS

Delo 400 LE SAE 15W-40 is an API CJ-4 heavy duty engine oil specifically formulated for on-highway and off-highway applications including 2010 compliant low emission diesel engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems. It is fully compatible with previous engine models and previous API Oil Service Categories. It delivers value through:

- **Minimized operating costs** — Exceptional soot dispersancy and wear control. Cylinders, pistons, rings, and injectors are well protected against wear and corrosion, providing optimum service life and minimal maintenance. Contributes to maximum vehicle utilization and minimal downtime.
- **Excellent emission control system life** — Provides optimum Diesel Particulate Filter (DPF) life for minimal downtime and cleaning, thus managing your maintenance costs.
- **Managed inventory costs** — Backward compatible with previous API Oil Service Categories and engine models. Suitable for use in four-stroke gasoline and naturally aspirated, turbocharged and modern electronically controlled/low emission diesel engines calling for an SAE 15W-40 heavy duty motor oil. Allows users with a wide mix of engine brands to enjoy simplified inventory and dispensing systems that may contribute to saving money, space and handling time.

- **Warranty Plus protection** — Bumper-to-bumper warranty protection from the engine to the drive train. Payment for Chevron lubricant-related damage to your equipment, including parts and labor.<sup>1</sup> Problem resolution and technical advice from Chevron's lubrication experts.
- **Access to Chevron's lubrication and industry knowledge** — Help maximize your bottom line business results.

### FEATURES

Delo<sup>®</sup> 400 LE SAE 15W-40 is an industry leading, super premium quality engine oil which exceeds industry and engine manufacturers' performance requirements. It is the most recommended OEM viscosity grade for over-the-road and off-highway diesel engines.



It is formulated using the most advanced additive technology to provide outstanding protection for on- and off-highway applications including 2010 compliant engines of on highway diesel trucks burning Ultra Low Sulfur Diesel (ULSD).

Delo 400 LE SAE 15W-40 is formulated with ISOSYN<sup>®</sup> Technology. ISOSYN Technology is a combination of premium base oils and high performance additives with Chevron's formulating expertise that "Rivals Synthetic Performance" and provides superb diesel engine parts protection - all at an outstanding value. ISOSYN Technology benefits customers by helping:

- Provide Extended Service Protection
- Maximize Engine Durability
- Minimize Operating Cost

Today, Delo 400 LE SAE 15W-40 meets the most stringent EGR soot control and particulate requirements.

<sup>1</sup> See Warranty Plus for details and restrictions.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

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Delo 400 LE SAE 15W-40 has been specifically designed to meet the demands of EGR and SCR engines while at the same time providing exceptional performance in conventional engines and other engine technologies like Caterpillar ACERT.

## **FUNCTIONS**

Delo 400 LE SAE 15W-40 helps keep rings clean and free for maximum combustion pressure and minimal wear. Delo 400 LE SAE 15W-40 minimizes valve and piston crown land deposits, leading to minimal oil consumption. Its high level of ashless dispersants keeps fuel soot in suspension and helps avoid filter plugging, heavy cylinder head sludge, abrasive polishing wear, high viscosity increase, and oil gelling. These problems can result in excessive engine wear and bearing failure on startup, without prior indication to the operator.

Specially selected oxidation inhibitors control oxidation, sludge, and undue thickening during oil drain periods. Delo 400 LE SAE 15W-40's unique blend of extreme pressure antiwear additive protects against valve train wear and scuffing of highly loaded parts operating under boundary lubrication. A specially selected viscosity index improver ensures easy flow at low temperatures and excellent film protection in hot engine areas. A defoaming additive prevents air entrapment.

The combination of premium dispersant additives and ISOSYN Technology allows Delo 400 LE SAE 15W-40 to effectively disperse soot and keep it in suspension. This minimizes the risk of valve train wear, lever polishing, and filter plugging.

## **APPLICATIONS**

Delo 400 LE SAE 15W-40 is a mixed fleet motor oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CJ-4 service category and SAE 15W-40 viscosity grade are recommended. It is formulated for engines operating under severe service and a wide range of climatic conditions.

Delo 400 LE SAE 15W-40 is excellent for use in new advanced engines developed to meet the latest emissions and reliability standards and in engines equipped with features like four-valve heads, super-charging, turbo-charging, direct injection, shorter piston crowns, higher power density, intercooling, full electronic management of fuel and emissions systems,

exhaust selective catalytic reduction, exhaust gas recirculation, and exhaust particulate filters.

It is formulated for exceptional performance with Ultra Low Sulfur Diesel and low sulfur diesel fuels.

This product is recommended for use in:

- Today's most modern on-highway low emission designs as well as in older engines.
- Today's most modern off-highway engines including those adapted for current and future emissions standards in construction, agriculture, marine, and mining applications.
- Marine transmissions where ZF lubricant list TE-ML 04C is specified.

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**Delo® 400 LE SAE 15W-40 is approved for:**

- **API Service Categories** CJ-4, CI-4 PLUS, CI-4, CH-4, SM
- **Cummins** CES 20081
- **Detroit Diesel** DDC Power Guard 93K218
- **DEUTZ** DQC III-10 LA
- **Mack** EO-O Premium Plus
- **MAN** M 3575
- **MB-Approval** 228.31
- **MTU** Category 2.1
- **Renault** VI RLD-3
- **Volvo** VDS-4
- **ZF** TE-ML 04C

**Delo 400 LE SAE 15W-40 meets the requirements of:**

- **Caterpillar** ECF-3, ECF-2
- **Ford** WSS-M2C171-E
- **JASO** DH-2
- **ACEA European Service Categories** E9, E7
- **major diesel engine manufacturers’:**
  - Caterpillar
  - Cummins
  - Detroit Diesel
  - MACK
  - MAN
  - Mercedes
  - Volvo

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.

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 in North America. This is the first MTU category 2.1 approved oil for this application that typically requires a category 3.0 or 3.1 approval.

**TYPICAL TEST DATA**

<b>SAE Grade</b>	<b>15W-40</b>
<i>Product Number</i>	222220
<i>SDS Number</i>	17108
Density at 15°C, kg/L	0.8806
Viscosity, Kinematic mm <sup>2</sup> /s at 40°C mm <sup>2</sup> /s at 100°C	131 15.7
Viscosity, Cold Crank, °C/mPa.s	-20/6400
Viscosity, MRV, °C/mPa.s	-25/26,400
Viscosity Index	126
Flash Point, °C(°F), minimum	> 204(> 399)
Pour Point, °C(°F)	-33(-27)
Sulfated Ash, mass %	1.0
Base Number, mgKOH/g, ASTM D2896	9.3
Phosphorus, mass %	0.12
Sulfur, mass %	0.32
Zinc, mass %	0.13

Minor variations in product typical test data are to be expected in normal manufacturing.

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