

Delo® 400 Multigrade SAE 15W-40



CALTEX

Delo®
Let's go further.™



Let's Go Further with Delo[®] 400 Multigrade SAE 15W-40.

When your heavy-duty equipment is working, your business is driving profits. At Caltex, our goal is to optimise your diesel engine performance — helping minimise operating costs and maximise equipment uptime.

As your lubrication partner, we strive to help keep your diesel equipment running reliably and efficiently in all kinds of operating conditions, including cold weather or extreme oil-drain intervals.

We understand the challenges facing diesel customers today and in the future:

- New engine technology development
- Different types of diesel fuels
- Latest Original Equipment Manufacturer (OEM) requirements and specifications
- Mixed engine types including new and older types
- Extending oil drain intervals
- Increasing engine durability

Count on Caltex's industry experience, technology leadership and the Delo[®] family of premium products to help you stay ahead of these challenges and protect and maximise the life of your vehicles.



Reliability & Durability Are Our Priority.

Caltex lubricants stand for one thing above all else: reliability. Properly lubricating the inside of a heavy-duty diesel engine requires more than just creating a protective film. Caltex's advanced formula Delo[®] 400 Multigrade SAE 15W-40 provides excellent oxidation resistance, deposit and oil consumption control and wear performance to protect against loss of engine performance and life. Delo[®] 400 Multigrade SAE 15W-40 has been formulated with ISOSYN[®] Technology to specifically protect your diesel equipment and vehicles, and reduce the need for multiple diesel engine oils. Delo's industry-leading lubricants have logged billions of kilometres and countless hours providing superior protection to diesel engine parts and maximising fuel efficiency so your vehicles and equipment can go further.

Delo® Protects with ISOSYN® Technology.

The Delo® 400 Multigrade SAE 15W-40 difference?

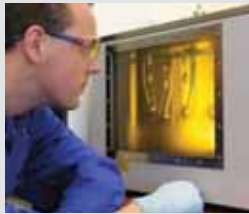
ISOSYN® Technology. It helps deliver the protection, performance and reliability you demand to help increase equipment uptime.

Caltex uses ISOSYN® Technology to formulate its top-tier Delo® products. Premium base oils with high-performance additives, combined with our formulation expertise, provide superb protection for diesel engine parts – at an outstanding value.

ISOSYN® Technology



Premium Base Oils



High Performance Additives



Caltex Formulation Expertise



Delo® with ISOSYN® helps:

- Extend service protection
- Maximise engine durability and life
- Minimise operating costs through improved fuel economy

Improved Customer Reliability

Delo® with ISOSYN® Technology protects critical engine parts to help maximise engine life.



Delo® 400 Multigrade SAE 15W-40 Exceeds Industry Specifications.

Delo® 400 Multigrade SAE 15W-40 is a world-class diesel engine oil formulated to provide outstanding long-drain performance, superb engine life protection and excellent everyday performance in all types of operations including stop-and-go, long haul, and high stress conditions.



Delo® 400 Multigrade SAE 15W-40 has been specifically formulated to provide superb protection and performance in harsh operating conditions, regardless of the type of diesel engine (older or new) and alternative fuel types. Its robust formulation is designed to operate in a wide range of conditions and climatic areas helping to minimise the number of diesel engine oils required by customers.

Delo® 400 Multigrade SAE 15W-40 exceeds most industry and engine manufacturers' performance requirements.

- 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

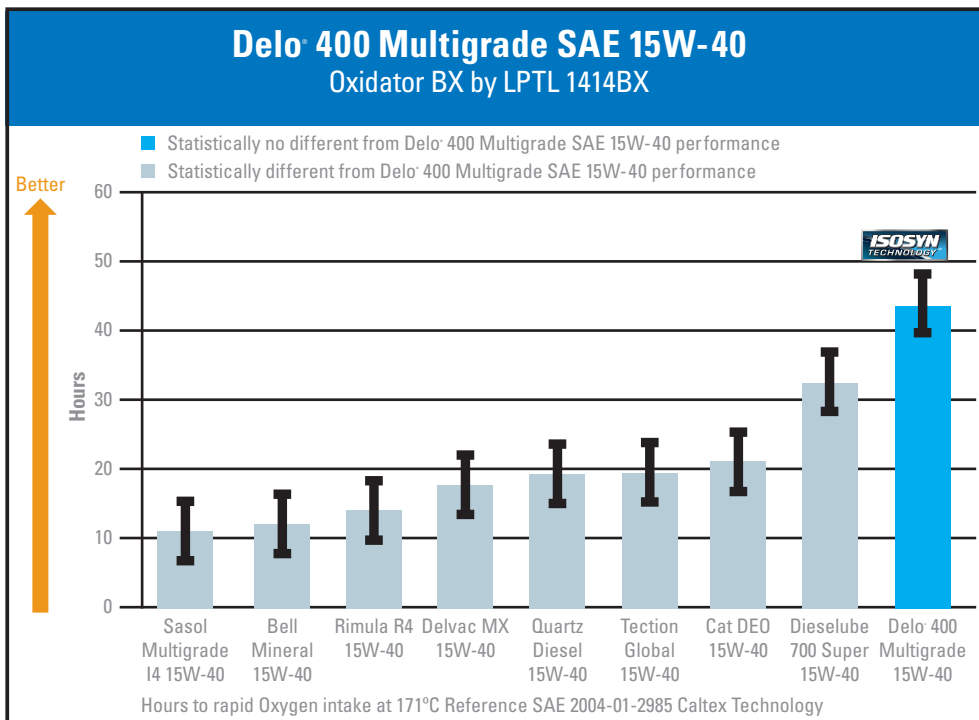
Meets the requirements of:

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

Delo® 400 Multigrade SAE 15W-40 Delivers Proven Results.

Superb Oxidation & Deposit Control

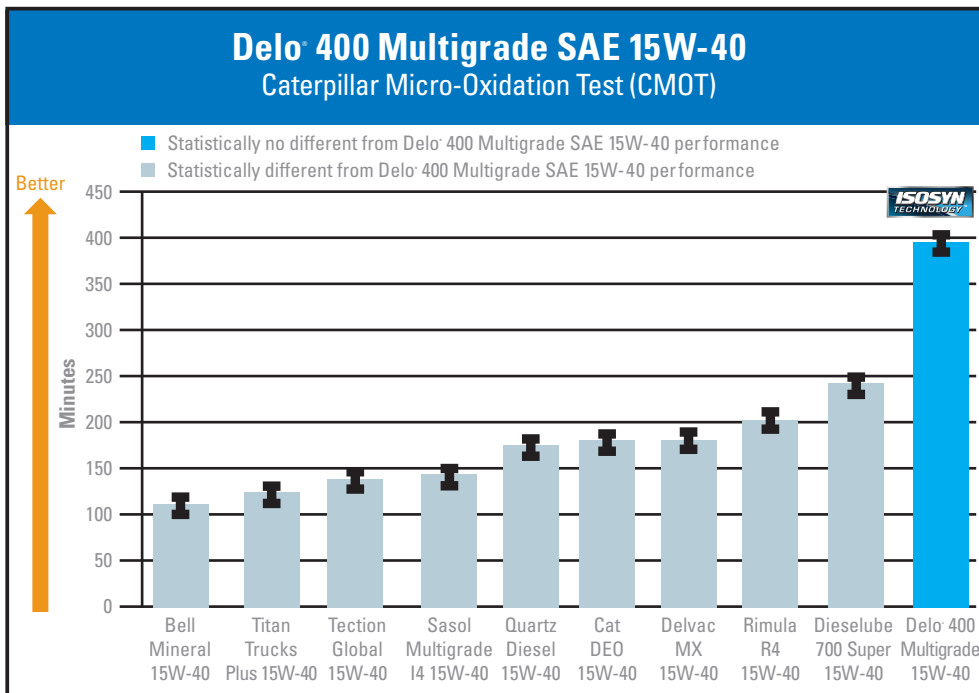
The Oxidator Bx test and Caterpillar Micro-Oxidation Test (CMOT) are good indicators of an oil's capability to resist oxidation that can result in viscosity increase, piston deposits and sludge formation.



Oxidator BX Test

The test is run at 171°C and measures the hours to rapid oxygen intake which relates to how long the oil lasts before sludge and deposits can cause harmful wear and potential component failure.

Delo® 400 Multigrade SAE 15W-40 was run in this test and showed excellent results, even when compared against competitor premium tier heavy-duty engine oil formulations. These results indicate that Delo® 400 Multigrade SAE 15W-40 provides excellent oil life performance at high operating temperatures.



Caterpillar Micro-Oxidation Test

The CMOT is run for 24 hours at 230°C and is measured in minutes and helps indicate the oil's ability to resist oil oxidation that can result in piston deposits.

Delo® 400 Multigrade SAE 15W-40 and competitor top tier heavy-duty engine oils were run in this test and the results compared to each other. Delo® 400 Multigrade SAE 15W-40 showed very good performance as compared to competitor products highlighting its robust formulation.

Superior performance in bench testing may not correlate to superiority of performance in the field.

Proven Field Results

DP WORLD ACHIEVES 33,000 HOURS OF DIESEL ENGINE LIFE

DP World achieves excellent engine reliability using Delo® 400 Multigrade SAE 15W-40 in round-the-clock port operations in the United Arab Emirates.

DP World is one of the largest port operators in the world, running 65+ ports that handle an immense amount of container traffic. They operate 24/7 and cannot afford downtime on their critical equipment.

Recently, one of their Rubber Tyre Gantry (RTG) cranes achieved 33,000 hours of operation. The diesel engine in the RTG was burning diesel fuel with 500ppm sulphur content and lubricated with Delo® 400 Multigrade SAE 15W-40 with 500 hours oil drain intervals (twice the recommended ODI).

Caltex and DP World had the opportunity to tear down the engine and inspect its parts for wear and deposit control performance. After 33,000 hours of severe service operation, the engine parts were in very good condition, which reinforced the excellent performance provided by Delo® 400 Multigrade in helping DP World achieve its reliability goals.

It's impressive to see the Volvo engine parts from our Rubber Tyre Gantry crane. It really shows the protection offered by Delo® 400 to help DP World's equipment go further.

Fahad Al Mazrooei
Manager T1 Cranes
DP World - UAE



Pistons

After 33,000 hours of severe service operation, the pistons are in good condition with minimal deposits on the piston lands and all rings free moving.



Piston Liners Interior

Liner cross hatch is still in place and visible highlighting the excellent wear protection provided by Delo® 400 Multigrade SAE 15W-40.



Connecting Rod Bearings

Very good condition exhibiting minor overlay removal after 33,000 hours of operation.



Camshaft

Exhibits good protection with no adhesive or skidding wear on the lobes. Can be used based upon inspection.



Proven Field Results

FREESTATE PETROLEUM ACHIEVES 1M KILOMETRES OF ENGINE DURABILITY

Freestate Petroleum Transportation has been hauling petroleum products for over 20 years in the South Africa market.

They operate under severe conditions with a fleet of over 40 Freightliner trucks and Cummins ISX 500 engines - burning 500ppm sulphur diesel fuel under heavy loads of 56,000 kilograms.

After one of their trucks achieved 1,000,000+ kilometres of total mileage using Delo® 400 Multigrade SAE 15W-40, Caltex and Freestate Petroleum personnel agreed to tear down the Cummins ISX 500 engine to check engine parts protection and wear performance.

The inspection showed a clean engine with minimal deposits and wear on the key engine components (see parts details alongside). Freestate Petroleum Transportation personnel were pleased with their decision to trust Caltex Delo® 400 Multigrade SAE 15W-40 to help their business go further.



We're very excited about the performance of this truck. It was the first truck in our fleet that we acquired about 8 years back and it's done about a million kilometres and on the performance of this truck we acquired additional trucks... all our trucks run on Delo® 400 and their family of products.

Jean Snyman
Owner
Freestate Petroleum Distributors



Pistons

After 1 million kilometres, pistons are in good condition with minimal deposit build-up on crownland or piston lands. Rings can move freely providing good oil consumption control.



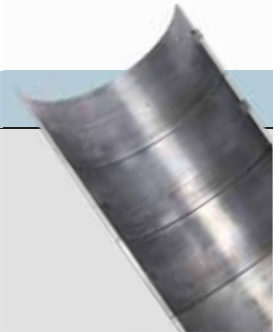
Piston Liners Exterior

Shows no liner pitting or harmful scale build-up using Delo® XLC after 1 million kilometres.



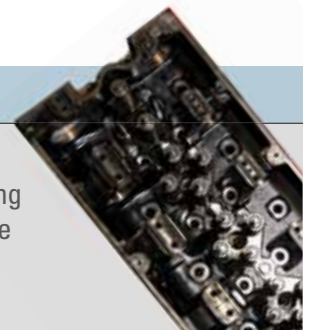
Connecting Rod Bearings

Very good shape showing minimal overlay removal and no copper underlay showing.



Top Deck

Very clean and shows no visible deposit or sludge build-up indicating excellent dispersancy performance offered by Delo® 400.



ISOSYN
TECHNOLOGY™



www.CaltexDelo.com

A **Chevron** company product

©2015 Chevron South Africa (Pty) Limited. All rights reserved.

All trademarks are the property of Chevron Intellectual Property LLC.