

# Delo® Heavy-Duty Performance For On-Road Diesel Vehicles



**Delo®**  
**Let's go further.®**



# Welcome to Delo® Products

Keeping you on the road is part of our business. Making the most of every dollar you invest is yours. At Chevron, we understand just how critical both of these are to your business and livelihood.

Thank you for the opportunity to let us walk you through the Delo heavy duty diesel premium product line providing bumper-to-bumper protection.

We'll share why Delo with ISOSYN® Technology helps provide the protection customers need to be confident they are maximizing vehicle productivity and minimizing operating costs.

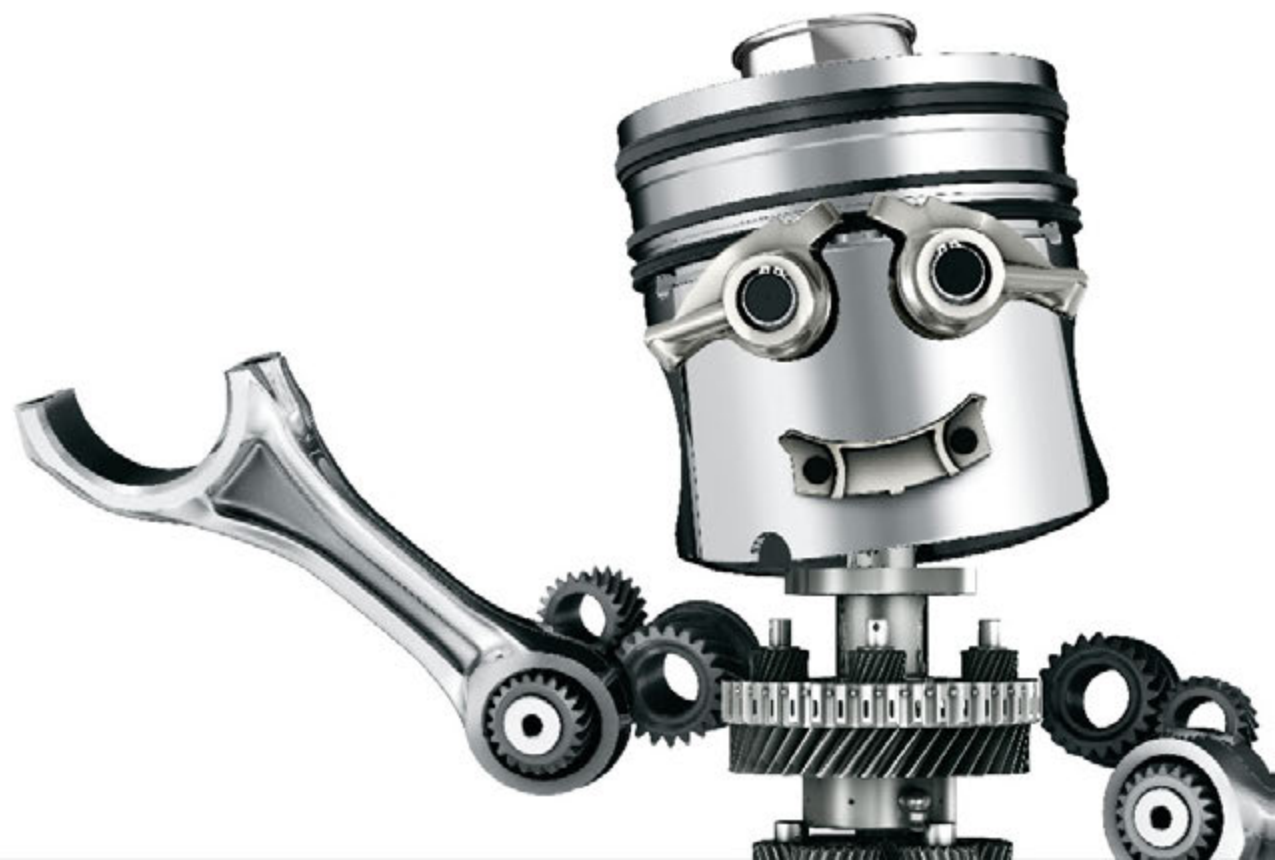
You'll also see how Delo 400 MGX can help minimize your operating costs, how fuel economy, how it compares to competitive products in testing, and what our customers are saying about the value Delo contributes to their business and bottom line.

We consider this guide to be an introduction. We look forward to learning more about the business needs of your on-road vehicles and how Delo products can help you and your business go further.



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## Let's Go Further on the Road with Delo®

When your heavy-duty vehicles are in motion, your business is driving profits. At Chevron, our goal is to give you the confidence to safely push engines further to help minimize operating costs and maximize performance. As your lubrication partner, we strive to keep your feet highly competitive and your costs well in line.

### We Understand The Challenges Facing On-Road Vehicles Today:

- New engine technology development
- Fuel economy improvement
- Reduction of vehicle carbon and emission footprints
- Extending drain intervals
- Government regulations
- Emission Standards

You can count on Chevron's industry experience, technology leadership, and Delo's premium family of products to help you stay ahead of these challenges and protect and maximize the life of your vehicles.



### Reliability is Our Priority

Chevron 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. Delo heavy-duty engine oils provide excellent soot dispersancy, wear protection, and sludge control to guard against loss of engine life and help reduce fuel and oil consumption.

What's more, the Delo family of products delivers integrity and performance as proven by various bench testing results. On the road, Delo's industry-leading lubricants have logged billions of miles and countless hours helping provide superior protection to diesel engine parts so your on-road vehicle can go further.

# Delo® with ISOSYN® Technology Protects

## ISOSYN Technology



Premium Base Oils



High Performance Additives



Chevron Formulation Expertise



## ISOSYN Technology



Light Neutral Heavy Neutral  
Chevron  
ISOCRACKING® / ISODEWAXING®  
Base Oil Technology

Delo Premium Additive Performance



Delo Premium Additive Formulation Provides Excellent Soot Dispersancy and Helps Prevent Deposit Buildup

Which provides Delo® with ISOSYN's Technology the premium formulation that protects critical engine parts:



Delo® with ISOSYN® Technology Protects Critical Engine Parts to Help Maximize Engine Life



Light Neutral Heavy Neutral  
Conventional  
Solvent Dewaxing  
Base Oil Technology

Economical Heavy Duty Engine Oil Additive Formulation Provides Poor Soot Dispersancy Which Increases Sludge Formation



Economical HDEO Formulation Sacrifices Protection for Cost Limits Critical Engine Life

## Delo with ISOSYN will help:

- Extend Service Protection
- Maximize Engine Durability (Life)
- Minimize Operating Cost

DIESEL PARTS PROTECTION



## Improved Customer Reliability

Delo with ISOSYN Technology Protects Critical Engine Parts to Help Maximize Engine Life



## Delo® 400 MGX SAE 15W-40 Exceeds Industry Specifications and OEM Approvals.

Delo 400 MGX SAE 15W-40 is a world-class diesel engine oil formulated to provide superb diesel parts protection in **EITHER** low- or high-sulfur diesel fuel.

Delo 400 MGX SAE 15W-40 has been specifically formulated to provide superb protection and performance in severe operating conditions, regardless of the type of diesel engine (older or newer low emissions) or fuel sulfur level burned in the engine. Its unique formulation and wide range of operating capability help minimize the number of diesel engine oils required by customers.

Delo 400 MGX SAE 15W-40 exceeds industry and most engine manufacturers' performance requirements:

- API CJ-4 / API CI-4+ / API SM
- ACEA E9 / E7
- Cummins CES 20081
- Volvo VDS-4
- Mack Premium Plus EO-O
- CAT ECF-3 / ECF-2
- MB 228.31
- MTU Category 2.1
- MAN 3575• Deutz DCQ III – 10 LA

SUPERB QUALITY, EXTENDED  
SERVICE PROTECTION AND  
OUTSTANDING PERFORMANCE



## Delo® with ISOSYN® Technology Providing a Wide Range of Heavy Duty Diesel Engine Oil Products for Excellent Engine Reliability



### Delo Gold Ultra

- With ISOSYN Technology
- Meets API CI-4
- Helps maximize engine life
- Extended drain capable
- Meets North American and European specifications



### Delo Gold

- With ISOSYN Technology
- Meets API CH-4
- Good wear protection
- Limits deposits
- Designed to protect higher mileage engines

Delo® Gold Ultra with ISOSYN® Technology extends our trucks' oil drain interval by 50%.

Marco Mirasol, Vice President - Logistics  
Readycon® Trading & Construction Corporation



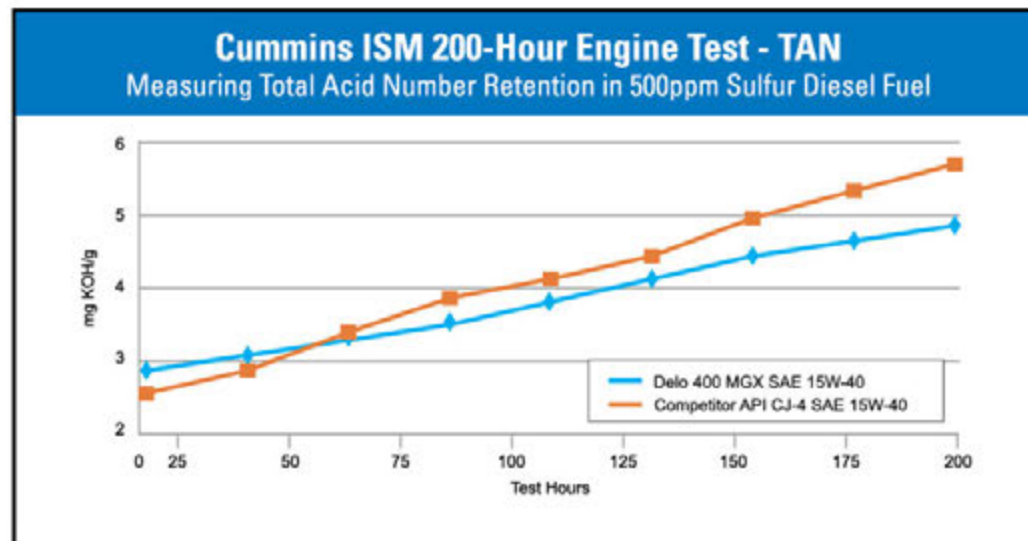
# Delo® 400 MGX Delivers Proven Performance Results.

## EXCELLENT BASE NUMBER RETENTION AND ACID NEUTRALIZATION

Delo 400 MGX has undergone a robust testing program including measuring its performance in 500ppm sulfur diesel fuel.

The Cummins ISM Engine test helps show the ability of an engine oil to neutralize acid when burning higher sulfur diesel fuel. It's an important first test to show how well an engine oil will perform before advancing to field testing.

Delo 400 MGX was run in this engine test stand and performed very well head-to-head against a leading competitor SAE 15W-40 oil in acid neutralization.



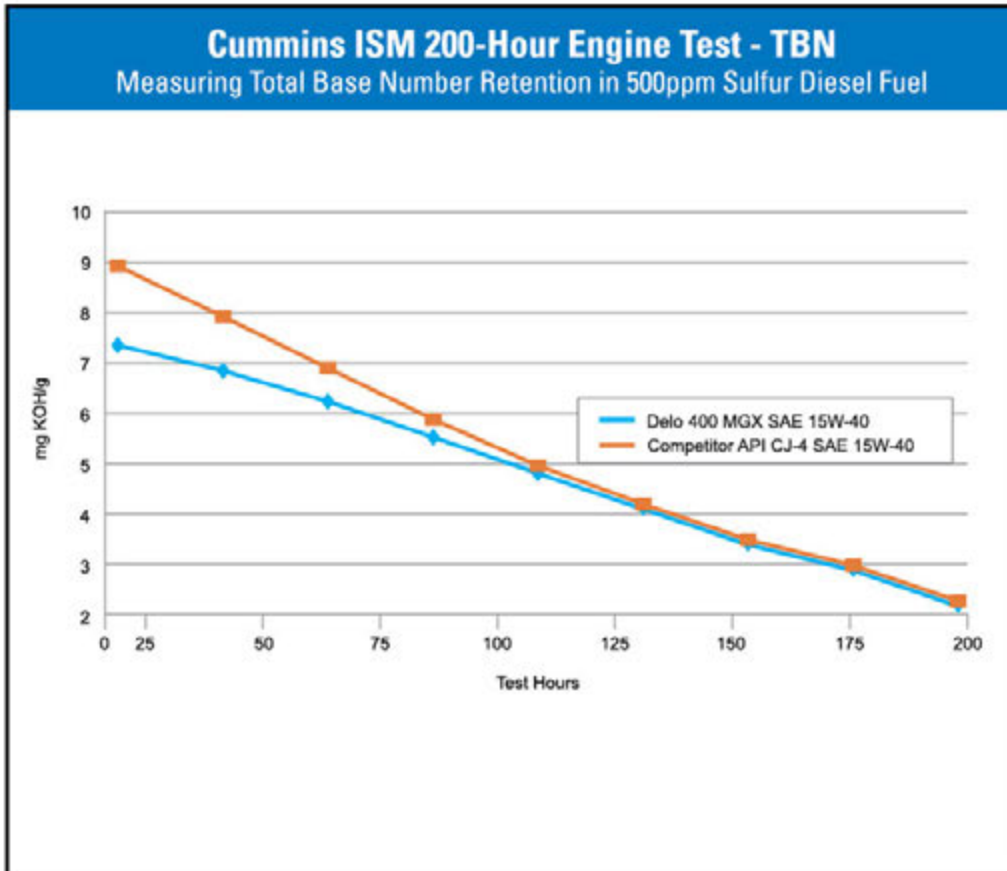
### Engine Test - Total Acid Number

Delo 400 MGX SAE 15W-40 was tested head-to-head against a leading competitor SAE 15W-40 oil and showed improved acid neutralization capability using 500ppm sulfur diesel fuel.



# Delo® 400 MGX Delivers Proven Performance Results.

EXCELLENT BASE NUMBER RETENTION AND ACID NEUTRALIZATION

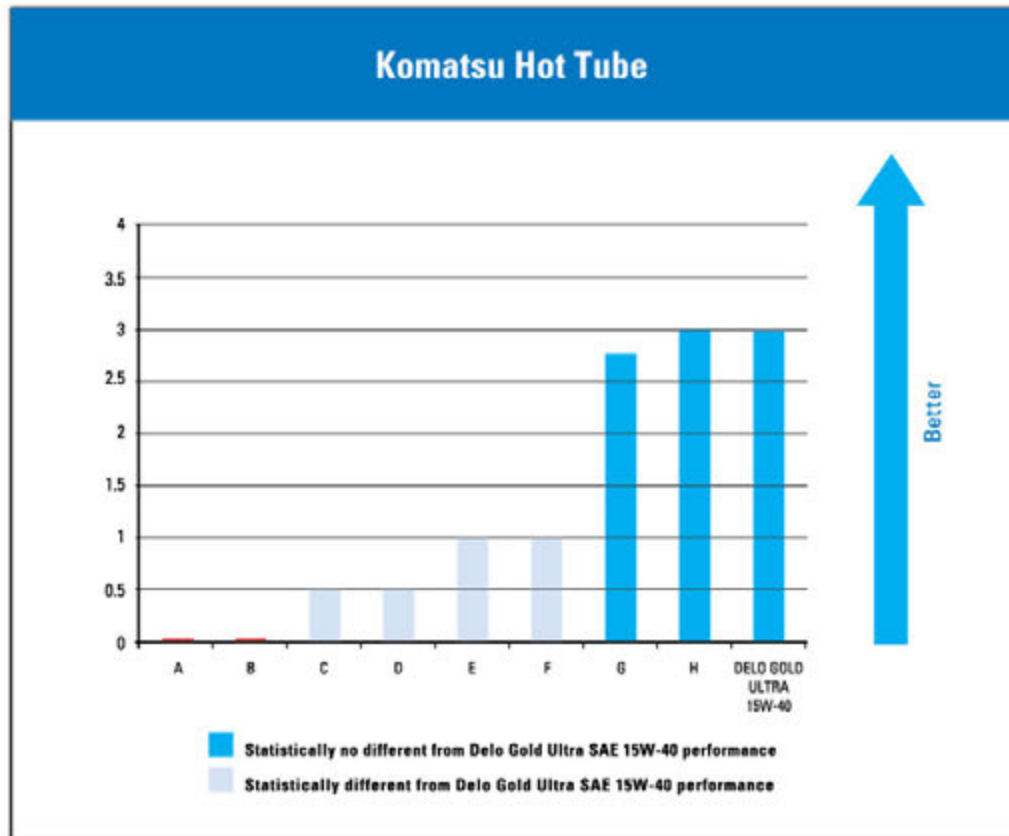


## Engine Test - Total Base Number

In measuring additional base number protection, Delo 400 MGX SAE 15W-40 showed a lower rate of base loss versus a leading competitor SAE 15W-40 oil. This indicates extended acid neutralization performance which protects critical diesel engine parts.

# Delo® 's Proven Performance Results

## KOMATSU HOT TUBE



### Test Measurement:

Indicative of high-temperature turbo-charger and piston skirt deposit protection.



### Result

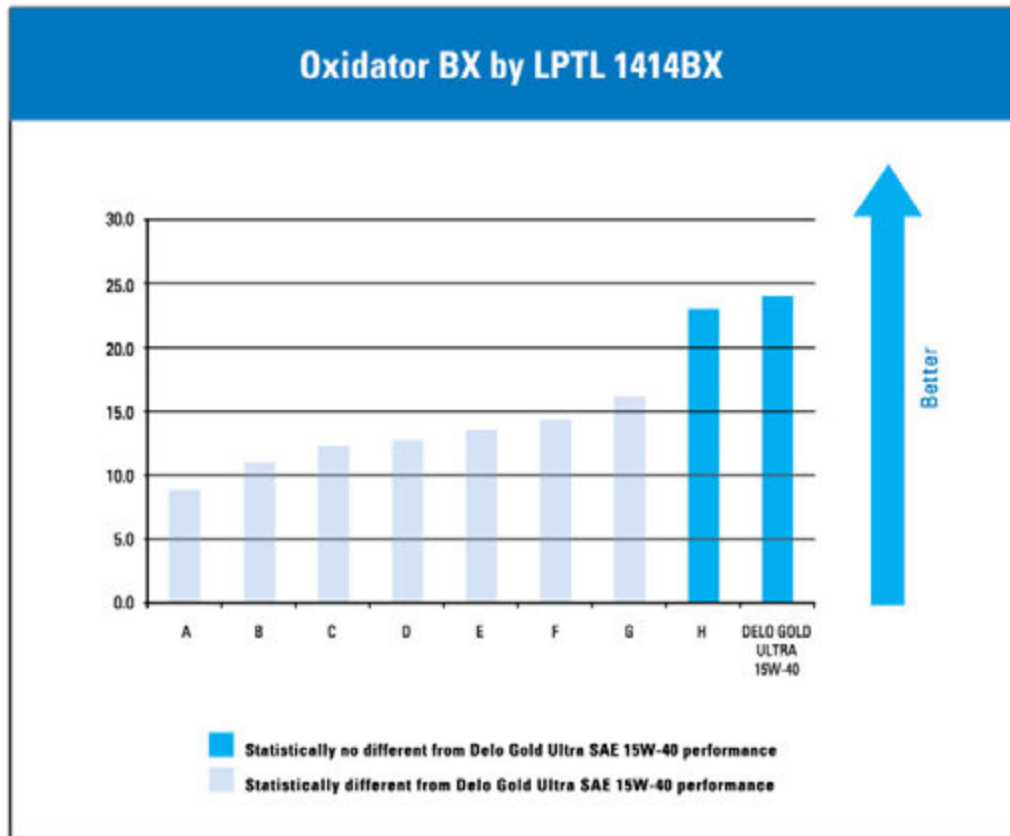
Delo® Gold Ultra 15W-40 ratings are statistically higher than Competitors A, B, C, D, E and F

### Test Procedure

290°C for 16 hours - 2 test average  
Chevron Technology

# Delo® 's Proven Performance Results

## OXIDATOR BX BY LPTL 1414BX



### Test Measurement:

Indicates an oil's ability to resist oxidation that can result in viscosity increase, deposits, and cam wear

### Test Procedure

Hours to rapid Oxygen intake at 171°C Reference SAE 2004-01-2985  
Chevron Technology

### Result

Delo® Gold Ultra SAE 15W-40 results indicate oxidation resistance better than Competitors E, F, G, D, H, A and B



# Delo® Products Protect Your Trucks - Bumper to Bumper

GET DELO PROTECTION WHERE YOU NEED IT MOST

Delo heavy-duty engine oils, gear oils, transmission fluids, and coolants are specifically formulated to meet the intense demands your vehicles face. At Chevron, we have a history of heavily investing in research and development to ensure your vehicles get the utmost protection from bumper to bumper.

We're so confident about the outstanding quality of Delo products that we offer a bumper-to-bumper warranty you may not find from other manufacturers.

**Fifth Wheel**

- Delo® Grease ESI
- Delo® Grease EP2
- Delo® Starplex EP 2

**Coolant System**

- Delo® XLI Corrosion Inhibitor – Premixed
- Delo® ELI Corrosion Inhibitor – Premixed
- Delo® XLC Antifreeze Coolant – Premixed
- Delo® ELC Antifreeze Coolant – Premixed

**Engine Crankcase**

- Delo® 400 MGX SAE 15W-40
- Delo® Gold Ultra SAE 15W-40
- Delo® Gold Multigrade SAE 15W-40, 20W-50
- Delo® Silver Multigrade SAE 15W-40, 20W-50

**Clutch Bearings**

- Delo® Grease ESI
- Delo® Starplex EP 2

**Transmissions (Manual & Automatic)**

- Delo® Gear ESI SAE 80W-90
- Texamatic® 1888 (Automatic)
- Delo® Gear EP-4 SAE 90 (Manual)

**Grease Points, Rods, Pins & Bearings**

- Delo® Grease EP
- Delo® Starplex EP 2

**Differentials & Axles**

- Thuban® GL5 EP SAE 85W-140
- Delo® Gear EP-5 SAE 85W-140

**Wheel Bearings**

- Delo® Grease ESI
- Delo® Grease EP
- Delo® Starplex EP 2

The product recommendations provide general guidelines for use in on-road trucks. All manufacturers have different coolant and lubricant requirements and recommendations. It will be important to contact a Chevron representative or refer to the Original Equipment Manufacturer manual to confirm the proper product is used for the application.

# Delo® Protects Buses, too

DELO QUALITY LUBRICANTS FOR BUS MAINTENANCE

Your buses carry the most important cargo possible — paying customers. We understand that your business is to deliver a driving experience that's smooth and comfortable. One that's not interrupted by engine trouble that could slow the customers' journey.

The Delo family of lubrication products has you covered with outstanding protection on axles, crankcases, wheel bearings, transmissions, and coolant systems. Choosing the proven performance of Delo quality lubricants can help maximize your fuel efficiency. That could mean a higher return on investments mile after mile.

## Engine Crankcase



- Delo® 400 MGX SAE 15W-40
- Delo® Gold Ultra SAE 15W-40
- Delo® Gold Multigrade SAE 15W-40, 20W-50
- Delo® Silver Multigrade SAE 15W-40, 20W-50

## Grease Points, Rods, Pins & Bearings



- Delo Grease ESI®
- Delo Grease EP 2
- Delo® Starplex EP 2

## Wheel Bearings



- Delo Grease ESI®
- Delo Grease EP 2
- Delo® Starplex EP 2

## Differentials & Axles



- Delo® Gear EP-5 SAE 85W-140
- Delo® Gear ESI® SAE 85W-140

## Coolant System



- Delo® XLI Corrosion Inhibitor – Premixed
- Delo® ELI Corrosion Inhibitor – Premixed
- Delo® XLC Antifreeze Coolant – Premixed
- Delo® ELC Antifreeze Coolant – Premixed

## Transmission



- Delo® Gear ESI® SAE 80W-90
- Texamatic® 1888 (Automatic)
- Delo® Gear EP-4 SAE 90 (Manual)



## Proven Field Results

NAKHONCHAI AIR ACHIEVES 80,000 KILOMETER OF OIL DRAIN INTERVAL IN SEVERE BUS OPERATION



**Nakhonchai air operates over 300 buses (European and Chinese engines) that go throughout Thailand. They are currently using Delo 400 Multigrade SAE 15W-40 with an oil drain interval of 60,000 kilometer**

The field trial objective is to achieve 80,000 kilometer oil drain interval using Delo 400 MGX SAE 15W-40

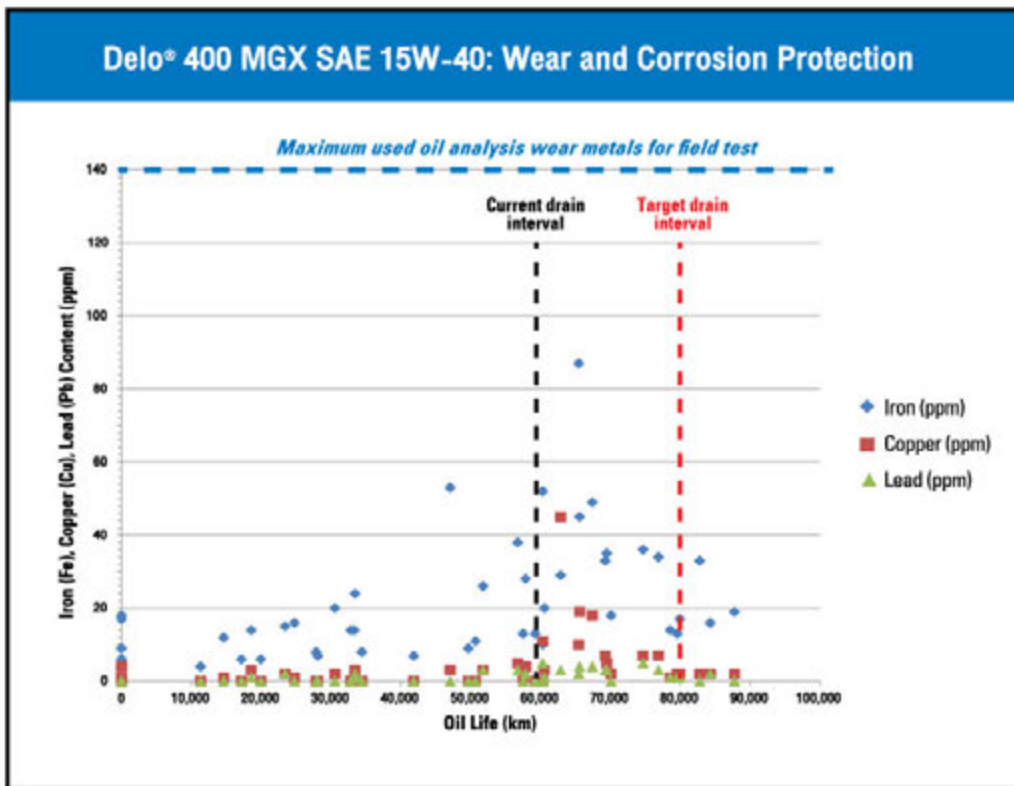
We agreed to test Delo® 400 MGX using our 10 European and Chinese buses. Results showed low wear of metals and the oil still has a relatively high TBN value even at 80,000 KM.

Chat Supama  
Assistant Manager - Maintenance Department  
Nakhonchai air Co., Ltd.



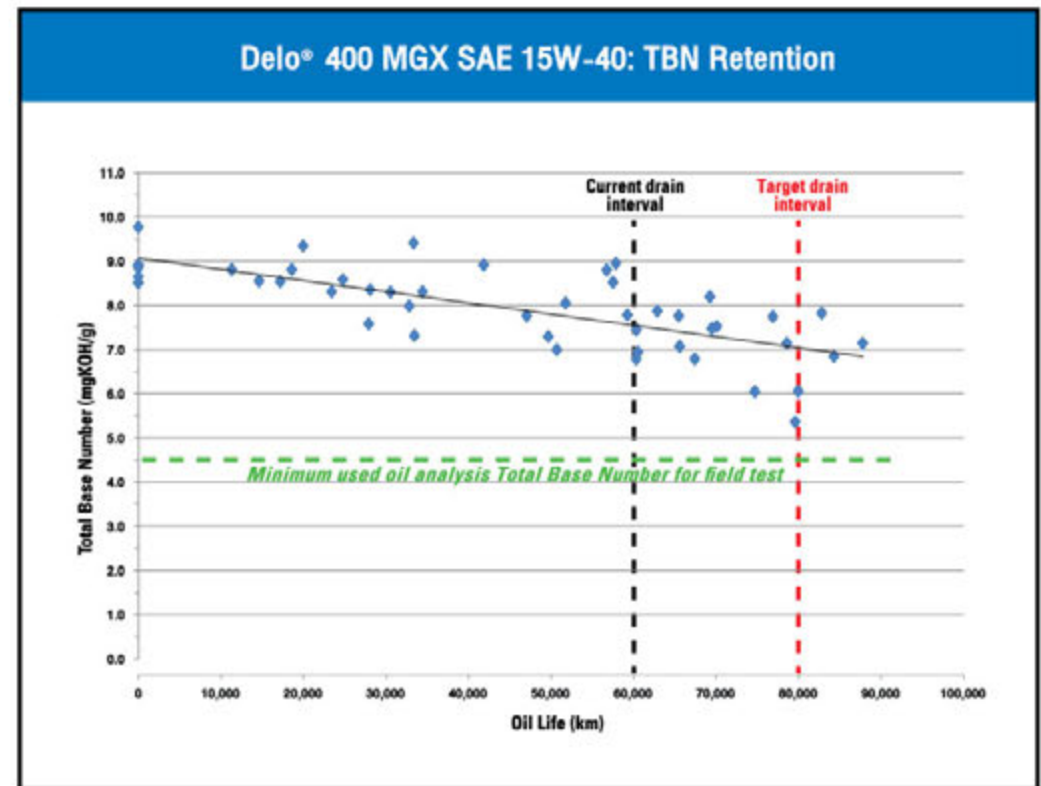


## Delo® 400 MGX SAE 15W-40: Wear and Corrosion Protection



Results show Delo 400 MGX providing low wear metals trends even at extended drain interval 80,000 kilometer

## Delo® 400 MGX SAE 15W-40: TBN Retention



Delo 400 MGX shows very good TBN retention indicating its capability to neutralize acids and still retain its effectiveness even up to 80,000 kilometer drain interval

# Customers Going Further with Delo®

## Delo® Testimonial: Chakguy Transport Co., Ltd. Achieves 40,000 kilometers oil drain intervals using Delo® Gold Ultra SAE 15W-40



Chakguy Transport Co., Ltd. provides transport services to the Vanachai Group to haul their alternative wood products. Integrated transportation services are provided 24 hours a day.

Delo® Gold Ultra SAE 15W-40 was tested with Chakguy Transport's large trucks in rigorous operating conditions. Oil drain intervals were targeted to be doubled from their current 20,000 kilometers using a competitor oil to 40,000 kilometers with Delo® Gold Ultra with ISOSYN® Technology to show the performance and protection it provides for customers and their equipment.

The test results showed that the Delo® Gold Ultra was able to extend drain intervals to 40,000 kilometers without the need to change or top up the oil. Additionally, these results were an improvement from the competitor oil previously required the oil filter and oil to be changed every 20,000 kilometers.



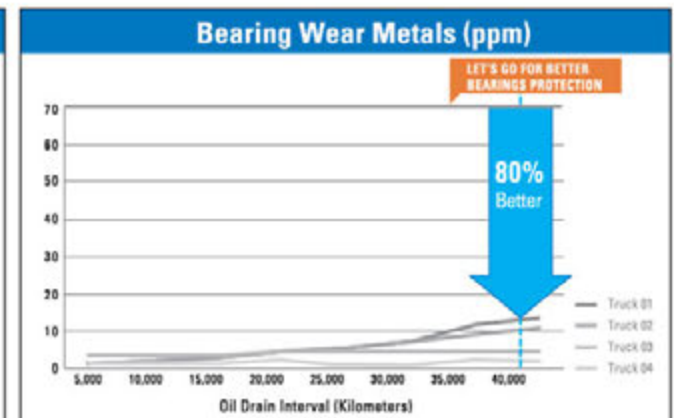
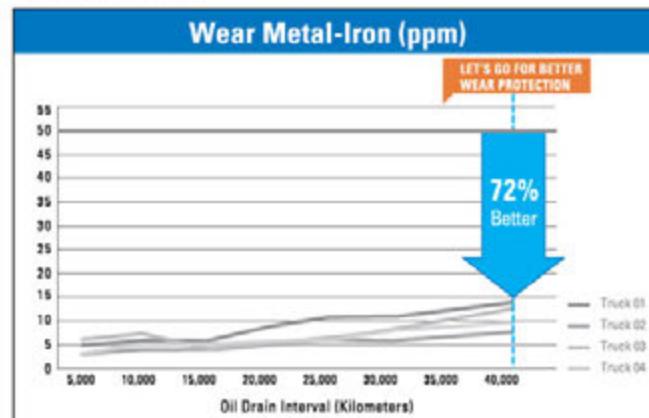
We switched to Delo Gold Ultra because we calculated the total cost savings and found that the product would give really good value for money to Chakguy Transport Co., Ltd. After switching to Delo Gold Ultra, our margins improved since we were able to lower engine maintenance costs with extended drain intervals.

Khun Rewit Hason,  
-Head of Purchase Planning – Chakguy Transport Co., Ltd.



In addition, a LubeWatch® Oil Analysis Program indicated the following results:

- The iron value was consistent with minimal wear in the engine while oil was changed at every 40,000 kilometers. This demonstrated that Delo® Gold Ultra provided very good engine life protection.
- Data revealed very low bearing metals in the oil, indicating good protection against corrosive and abrasive wear in the bearings



# Delo® Coolants Contribute to Long Engine Life

BE SURE TO ADD THE PROVEN PROTECTION OF DELO ELC®



## Delo® XLI Corrosion Inhibitor

- Concentrated version of corrosion inhibitor
- Recommended where freeze point is not of a concern
- Achieves service life up to 960,000 km. / 12,000 hours / 6 years In mobile equipment applications
- Offers excellent elastomer compatibility
- Features low aquatic toxicity, based on recommended mix rate of 5.5-10% wt in water
- Approved against MAN B&W D36 5600; MAN 248; Wartsilla 32-9011; Deutz (TRD199-99-2091); MaK; MWM

### OEM Recommendations

- Detroit Diesel
- Deutz (TR0199-99-2091)
- GEC Alsthom Ruston
- Liebherr MD 1-36-130 (DCA)
- MAN 248
- MB 312.0
- MTU MTL 5049
- MWM
- Scania TI 2-98 0813 TB
- Sulzer Diesel ZBS0503.doc
- Ulstein Bergen
- Wartsila 32-9011
- Yanmar

\*Also available in Premixed coolant ready for use



## Delo® ELC Antifreeze/Coolant

- Nitrited formulation with longest protection
- Achieves service life up to 1,200,000 km. / 15,000 hours / 8 years
- Provides up to 32,000 hours of coolant system protection for stationary engines
- Fully tested against CAT EC-1
- Meets ASTM D6210

### OEM Recommendations

- Caterpillar
- Cummins
- Ford Power Stroke®
- Freightliner
- GM Duramax
- J.I. Case
- John Deere
- Kenworth
- New Holland
- Peterbilt
- Volvo / Mack
- Waukesha
- MAN
- Most major engine and equipment manufacturers requiring a nitrite-containing Extended life coolant

### Specifications and Meet the Requirement of:

- ASTM D 3306
- ASTM D 6210
- Caterpillar EC-1
- Navistar CEMS B Type III
- TMC RP 329, RP 351 (color)

\*Also available in Premixed 50/50 coolant ready for use



# For Every Part that Needs Protection, We're Your Partner

DELO® DRIVELINE PRODUCTS ENGINEERED FOR EXTREME PROTECTION



## Delo® Gear EP-5

High performance and multipurpose thermally stable extreme pressure (EP) automotive gear lubricant with proven performance for API GL-5 and MT-1.

### Benefit

- Long gear life
- Excellent thermal and oxidation stability
- Excellent foam inhibition
- Seal protection

### Performance Standard

- SAE J2360 (approved)
- Meet the requirement of:
- API GL-5 (self-certified)
  - API MT-1 (self-certified)
  - Meet the requirement of Mack GO-J



## Delo® Gear EP-4

Multipurpose extreme pressure (EP) automotive gear lubricant with proven performance for API GL-4.

### Benefit

- Long gear life
- Rust and corrosion protection
- Seal protection

### Performance Standard

- Meet the requirement of:
- API GL-4

# Smooth Operation of Every Part is Critical, Don't Forget the Grease

DELO® GREASES PROVIDE 24/7 PERFORMANCE



To help your truck, bus, or vehicle go further, it's important that every engine part operate smoothly. Delo's premium grease products are formulated to provide high performance and long-life protection no matter what your on-highway vehicles encounter down the road.

Delo greases excel at protecting key greased vehicle components in adverse climates and tough operating conditions.



## Delo® Grease ESI:

Formulated to provide extended service grease protection for both on- and off-road diesel vehicles. Delo Grease ESI provides excellent load carrying capability, superb water washout performance and protects against shock loading. It has been specifically engineered to grease the entire key truck components.

## Delo® Starplex EP 2

A premium lithium complex thickener, EP and tackiness additives to help protect against shock load, water washout, and high temperature applications





**ISOSYN**  
TECHNOLOGY™



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