



The strength to go further



PETRONAS Urania

Stronger for longer



Discover core strength. Visit www.pli-petronas.com

PETRONAS is ready for the world of tomorrow, today

PETRONAS Lubricants International (PLI) is part of the PETRONAS Group. With 10 blending plants, over 30 sales offices and products distributed in more than 90 countries worldwide, PLI's global network of over 240 scientists, technical professionals and engineers anticipate future mobility challenges and opportunities, then research and develop advanced fluid technology solutions to meet tomorrow's challenges, today.

We strive to deliver maximum value to our customers, the markets in which they compete and consumers – while minimising our impact on the environment, pioneering high performance fluids that are dedicated to emission reduction and manufactured in increasingly low CO₂ environments.

We're an ambitious business, driven by a relentless, restless energy.

What's next? What if? How can we? Why don't we?

We're unstoppable. We are PETRONAS.

The world is changing and growing – fast

It's tough out there – and it's getting tougher. The world is changing at breakneck speed, throwing an ever-growing, intense set of external challenges and pressures your way...

As people are living longer, the **global population is growing** – significantly in the East, and with particular expansion among the middle classes. This increase in middle class consumption will place increased pressure on the supply chain, with more food and goods to be transported by **more trucks**, covering more kilometres - delivering to more people that don't want to wait.

Right now...

There are more than 90 million new trucks and vans on the road each year*

*Automotive World

And as the population rises, so too will **urbanisation** and the **growth** of megacities, creating even more challenges for last mile deliveries - and as more and more trucks enter densely populated areas, it's likely that they'll be required to meet the same emissions standards as light trucks and vans.

Finally, globalisation – the big trend of the last 20 years - is slowing down as trade is starting to become more regionalised, increasing the demand for trucks, light trucks and vans.

By 2030...



The business environment is getting tougher – fast

The relentless pace of global change means the operating environment is getting tougher, too. Demand is heavier, journeys are longer, timescales are shorter, competition is greater, customer expectations are higher, environmental regulations are tougher and vehicle technology is moving faster than it ever has before.

Increasing CO₂ emission and labour regulations means businesses need to seek **more sustainable solutions** – at a time when **rising operating costs** paired with **lower cost entrants** from developing economies place more **pressure on profit and margins**.

The pressure's on: The drive to net zero CO₂ emissions

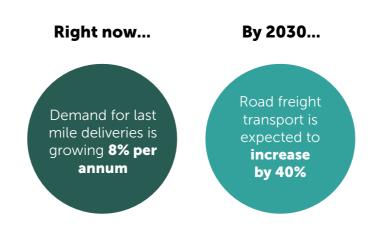
The move to net zero CO_2 emissions by 2050 means limits for CO_2 , NO_x and PM are up to 98% lower. This, coupled with tighter labour regulations, means OEMS are forced to introduce major hardware design interventions – everywhere from the engines and pistons to the after treatment systems – with greater investment placed in hybrid engine technologies, biofuels and gas fuels, and new, more demanding fluid specifications.

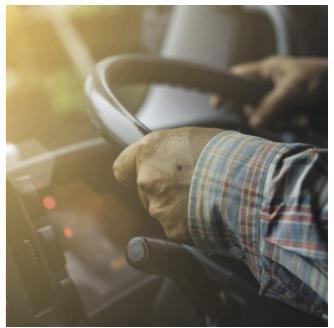
2013 - Euro VI



Technological developments designed to improve efficiency and productivity – such as connected vehicles allowing truck-to-HQ, truck-to-truck and driverto-HQ communication – also bring with them **complexity** and the need for **handson**, **intelligent interpretation** of new data sets.

All at a time when we can expect more congestion and city traffic than ever. This means more **stop-start driving**, more engines running at **higher temperatures**, and **more stress for transmission systems and fluids** – all of which can lead to **rising maintenance costs** and **unscheduled downtime**.





A perfect storm of tighter deadlines, harsher conditions, keener competition and tougher regulations means that now, more than ever, it takes core strength for fleets to minimise risk, maximise profit and uptime, go the distance and succeed.

We're here to help.

Electric trucks could account for **15%** of global truck sales

New PETRONAS Urania with StrongTechTM technology Engineered to stay stronger for longer

To withstand the hostile environment deep inside the engine over long distances and in stop/start operating conditions, an oil needs to be incredibly resilient.

It needs the durability to maintain its optimal viscosity in the face of high temperatures and harmful deposts. It needs core strength.

PETRONAS Urania with StrongTech™ technology is engineered to stay stronger for longer, forming a uniquely strong fluid film to extend drain intervals and engine life, maximise performance and profitability, and give you the core strength to keep moving.



Stronger fluid

- Reduces metal-to-metal contact even at extreme temperatures.
- Controls harmful soot and deposits thanks to stronger cleaning properties.
- Resists oxidation and viscosity loss caused by high temperatures or high shear

Stronger engine

- Delivers more power and torque.
- Offers longer engine life.
- Reacts faster
- to prevent issues.
- > Extends DPF life.

StrongTech[™] Stronger for longer

Stronger vehicle

- Runs for longer even in harsh external conditions and under the stresses of different driving styles.
- Delivers reduced emissions thanks to improved fuel efficiency.
- Enables lower operating costs.

Overview

PETRONAS Urania with StrongTech™ technology delivers improved fluid strength for longer engine life. How? Because its incredibly strong molecule chains lock away harmful deposits to maintain optimal viscosity and defend against wear and oxidation.

PETRONAS Urania with **StrongTech™**

technology delivers improved fluid strength for longer engine life. How? Because its incredibly strong molecule chains lock away harmful deposits to maintain optimal viscosity and defend against wear and oxidation.

Developed to overcome the challenges of today, while being equipped to meet the demands of tomorrow's engines, the new PETRONAS Urania range is ready for anything. Suitable for low emission engines, our products are designed to meet the Euro VI, emission standards that will be rolled out in key markets.

Additionally, our incredibly strong engine oil keeps vehicles on the road for longer - helping to achieve profitable growth. It enhances engine protection and extends engine life.



Strong business growth

StrongTech™ technology maintains fuel efficiency for longer, contributing towards better overall engine strength. The oil meets the latest OEM requirements for extended drain intervals. And it's designed to help strengthen businesses by maximising profit and minimising downtime and running costs.



Strong vehicle and engine performance

PETRONAS Urania is engineered to stay stronger for longer - its incredibly strong molecule chains help to achieve longer drain intervals with better soot handling, corrosion control and deposit control. It maintains engine power at the highest level, as the thin yet extremely strong oil film minimises friction and power losses.



Strong environmental responsibility

75% of our R&T budget is dedicated to CO₂ reduction, helping you meet regulatory requirements and stay at the forefront of responsible fleet operation. That's why new Urania 5000 LS-FE 5W-30 has been developed to maintain a much thinner film compared to conventional 5W-30 oils, significantly reducing fuel consumption and harmful emissions.

PETRONAS Urania full range





PETRONAS Urania URANIA 5000 ECO 5W-20



Benefits

PETRONAS Urania 5000 ECO 5W-20

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Ultimate Fuel Economy thanks to its low viscosity.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Extended Drain Interval and Engine Life driven by:
 - Outstanding protection for emission after-treatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Exceptional thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

SAE grade Specifications

Code 71833

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

Performance level

MAN M 3977

PETRONAS Urania URANIA 5000 LS-FE 5W-30



Benefits

PETRONAS Urania 5000 LS-FE 5W-30

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Outstanding Fuel Economy.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Extended Drain Interval and Engine Life driven by:
 - Outstanding protection for emission after-treatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Exceptional thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

| SAE grade | Specifications |
|-----------|----------------|
| 5W-30 | API FA-4 |
| | JASO DH-2 |

Code 71706

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

Performance level

MB-Approval 228.61

Cummins CES 20087 Detroit Diesel DFS93K223

PETRONAS Urania URANIA 5000 LSF 5W-30



Benefits

PETRONAS Urania 5000 LSF 5W-30

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Enhanced Fuel Economy.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Extended Drain Interval and Engine Life driven by:
 - Outstanding protection for emission after-treatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Exceptional thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

| SAE grade | Specifications |
|-----------|-----------------|
| 5W-30 | API CK-4 |
| | ACEA E6, E7, E9 |
| | JASO DH-2 |

Code 71707

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

Cummins CES 20086 Deutz DQC IV-10 LA Mack EOS-4.5 MB-Approval 228.51 MTU CAT. 3.1 Renault RLD-3 Volvo VDS-4.5

Performance level

CAT ECF-3 Detroit Diesel DFS93K222 DAF Extended Drain*

PETRONAS Urania URANIA 5000 E 5W-30



Benefits

PETRONAS Urania 5000 E 5W-30

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Enhanced Fuel Economy.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Extended Drain Interval and Engine Life driven by:
 - Outstanding protection for emission after-treatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Exceptional thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

| SAE grade | Specifications |
|-----------|---------------------|
| 5W-30 | API CJ-4 |
| | ACEA E4, E6, E7, E9 |

Code 71810

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

Cummins CES 20081 Deutz DQC IV-10 LA Mack EO-O Premium Plus MAN M3677 / M3477 MB-Approval 228.51 MTU CAT. 3.1 Renault RLD-3 Scania LDF-4 Volvo VDS-4

Performance level

CAT ECF-3 Detroit Diesel DFS93K218 DAF Extended Drain* MAN M3575 / M3271-1

PETRONAS Urania URANIA 5000 F 5W-30



Benefits

PETRONAS Urania 5000 F 5W-30

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Improved Fuel Economy.
- Longer Drain Interval and Engine Life driven by:
 - Excellent control in deposit build ups, delivering optimum fleet's engine performance.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Outstanding protection with high anti-wear properties to protect engine in severe conditions.
 - Longer oil drain capability.

| SAE grade | Specifications |
|-----------|----------------|
| 5W-30 | ACEA E4, E7 |

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

Cummins CES 20077

Deutz DQC IV-10 Mack EO-N MAN M3277 MB-Approval 228.5 MTU Type 3 Renault RLD-2 Scania LDF-3 Volvo VDS-3

Performance level

Cummins CES 20076 DAF Extended drain* Iveco 18-1804 Class TFE

PETRONAS Urania URANIA 5000 LCV 5W-30



Benefits

PETRONAS Urania 5000 LCV 5W-30

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Improved Fuel Economy.
- Longer Drain Interval and Engine Life driven by:
 - Excellent control in deposit build ups, delivering optimum fleet's engine performance.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Outstanding protection with high anti-wear properties to protect engine in severe conditions.

| SAE grade | Specifications |
|-----------|----------------|
| 5W-30 | ACEA A5/B5 |

Code 71712

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.



Performance level

Iveco 18-1811 Class S1 Ford WSS-M2C-913C, 913-D Renault RN0700

PETRONAS Urania URANIA 5000 LSE 10W-40



Benefits

PETRONAS Urania 5000 LSE 10W-40

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Longer Drain Interval and Engine Life driven by:
 - Excellent control in deposit build ups, delivering optimum fleet's engine performance.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Longer oil drain capability, especially on low emission engines.
 - Outstanding protection for emission after-treatment systems such as DPF and DOC with low ash formulation.

| SAE grade | Specifications |
|-----------|----------------|
| 10W-40 | API CI-4 |
| | ACEA E6, E7 |
| | JASO DH-2 |

Provides outstanding Driving Experience through:

 Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.

Approvals

MB-Approval 228.51 MAN M3477, M3271-1 Mack EO-N Renault RLD-2 Volvo VDS-3

Performance level

Cummins CES 20077/20076 Deutz DQC IV-10 LA MTU Type 3.1

PETRONAS Urania URANIA 5000 LS 10W40



Benefits

PETRONAS Urania 5000 LS 10W-40

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Extended Drain Interval and Engine Life driven by:
 - Outstanding protection for emission after-treatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Exceptional thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

| SAE grade | Specifications |
|-----------|-----------------|
| 10W-40 | API CK-4 |
| | ACEA E6, E7, E9 |

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

CUMMINS CES 20086 Deutz DQC IV-18 LA Mack EOS-4.5 MAN M3477 MB-Approval 228.51 MTU CAT. 3.1 Renault RLD-3 Volvo VDS-4.5

Performance level

CAT ECF-3 DAF Extended Drain* Detroit Diesel DFS93K222 Iveco 18-1804 Classe TLS E9 JASO DH-2 Scania Low Ash

PETRONAS Urania URANIA 5000 10W-40



Benefits

PETRONAS Urania 5000 10W-40

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Longer Drain Interval and Engine Life driven by:
 - Excellent control in deposit build ups, delivering optimum fleet's engine performance.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Outstanding protection with high anti-wear properties to protect engine in severe conditions.
 - Longer oil drain capability, especially on low emission engines.

| SAE grade | Specifications |
|-----------|----------------|
| 10W-40 | API CI-4 |
| | ACEA E4, E7 |

Code 71500

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Exceptional low temperature viscosity for improved lubrication during start-up.

Approvals

MB-Approval 228.5 Volvo VDS-3 MAN M3377 / M3277 Renault RLD-2 Cummins CES 20078 Mack EO-N MTU Type 3 Performance level

lveco 18-1804 Classe T3 E4

PETRONAS Urania URANIA 3000 LS 10W-30



Benefits

PETRONAS Urania 3000 LS 10W-30

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Improved Fuel Economy.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Longer Drain Interval and Engine Life driven by:
 - Optimal protection for emission aftertreatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Enhanced thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

| SAE grade | Specifications |
|-----------|----------------|
| 10W-30 | API CK-4 |
| | ACEA E7, E9 |

Code 71708

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Excellent low temperature viscosity for improved lubrication during start-up.

Approvals

Cummins CES 20086 Deutz DQC III-10 LA Mack EOS-4.5 MB-Approval 228.31 MTU CAT. 2.1 Renault RLD-3 Volvo VDS-4.5

Performance level

CAT ECF-3 DAF Detroit Diesel DFS93K222 Ford WSS M2C171-F1 MAN M 3775

PETRONAS Urania URANIA 3000 10W-40



Benefits

PETRONAS Urania 3000 10W-40

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Longer Drain Interval and Engine Life driven by:
 - Excellent control in deposit build ups, delivering optimum fleet's engine performance.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Longer oil drain capability, especially on low emission engines.

| SAE grade | Specifications |
|-----------|----------------|
| 10W-40 | API CI-4 |
| | ACEA E7 |
| | Global DHD-1 |
| | JASO DH-1 |

Code 71609

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Excellent low temperature viscosity for improved lubrication during start-up.

Approvals

Performance level

CAT ECF-2, ECF-1a Cummins CES 20078/20077 Detroit Diesel DSF 93K215 Deutz DQC III MAN M3275 Mack EO-N MB 228.3 MB 229.1 MTU Type 2 Renault VI RLD-2 Volvo VDS-3

PETRONAS Urania URANIA 3000 15W-40



Benefits

PETRONAS Urania 3000 15W-40

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Longer Drain Interval and Engine Life driven by:
 - Excellent control in deposit build ups, delivering optimum fleet's engine performance.
 - Reduces acidic levels that lead to corrosion, making your fleet engines more durable and longer life.
 - Longer oil drain capability, especially on low emission engines.

| SAE grade | Specifications |
|-----------|----------------|
| 15W-40 | API CI-4 |
| | ACEA E7 |
| | Global DHD-1 |
| | JASO DH-1 |

Code 71599

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Good low temperature viscosity for improved lubrication during start-up.

Approvals

MB-Approval 228.3 Cummins CES 20078 Detroit Diesel DSF 93K215 Deutz DQC III Mack EO-N MTU Type 2 Renault VI RLD-2 Volvo VDS-3

Performance level

CAT ECF-2, ECF-1a Cummins CES 20077 Iveco 18-1804 Class T2 E7 MAN M3275

PETRONAS Urania URANIA 3000 LS 15W-40



Benefits

PETRONAS Urania 3000 LS 15W-40

enhances your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- Better fluid film resistance under sever mechanical stress to deliver enhanced engine durability.
- Longer Drain Interval and Engine Life driven by:
 - Optimal protection for emission aftertreatment systems such as DPF and DOC with low ash additive system.
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.
 - Enhanced thermal and oxidation stability under high temperature, providing viscosity stability and preventing formation of deposits and sludge to prolong oil life even under severe conditions.

| SAE grade | Specifications |
|-----------|----------------|
| 15W-40 | API CK-4 |
| | ACEA E7, E9 |

Code 71568

Provides outstanding Driving Experience through:

- Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.
- Good low temperature viscosity for improved lubrication during start-up.

Approvals

Cummins CES 20086 Deutz DQC III-10 LA Mack EOS-4.5 MB-Approval 228.31 MTU CAT. 2.1 Renault RLD-3 Volvo VDS-4.5

Performance level

CAT ECF-3 DAF Detroit Diesel DFS93K222 Ford WSS M2C171-F1 MAN M 3775

PETRONAS Urania **URANIA 800 20W-50**

PETRONAS Urania **URANIA 800 15W-40**

Benefits

PETRONAS Urania 800 20W-50 protects your Business Profits and your vehicle availability while significantly reducing your operating costs through:

- > Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.
- > Longer Engine Life driven by:
 - Reduces acidic levels leads to corrosion, making your fleet engines more durable and longer life.



Code 71509





| SAE grade | Specifications | Approvals | Performance level | SAE grade | Specifications | |
|-----------|----------------|-----------|----------------------------------|-----------|----------------|--|
| 20W-50 | API CF-4 | | MAN 271 MB 228.1 Volvo VDS | 15W-40 | API CF-4 | |



Benefits

PETRONAS Urania 800 15W-40 protects your Business Profits and your vehicle availability while significantly reducing your operating costs through:

> Maintains oil at optimal viscosity levels, delivering optimal lubrication to prevent unplanned breakdowns.

Improve Driving Experience through:

> Effectively combats high concentration of soot build ups, critical to prevent loss of vehicle horsepower.

Approvals

Performance level

MAN 271 MB 228.1 MTU Type 1 Volvo VDS

PETRONAS Urania URANIA 500 10W

PETRONAS Urania URANIA 500 30

Benefits

PETRONAS Urania 500 SAE 10W delivers:

- Piston cleanliness & minimizing deposits build ups, protects engine from wear.
- Helps dispersing soot, hence reduces soot induced oil thickening.





Code 71627

Code 71628

| | | | | _ | | | |
|-----------|----------------|-----------|-------------------|---|-----------|----------------|--|
| SAE grade | Specifications | Approvals | Performance level | | SAE grade | Specifications | |
| 10W | API CF | | | | 30 | API CF | |

Benefits

PETRONAS Urania 500 SAE 30 delivers:

- Piston cleanliness & minimizing deposits build ups, protects engine from wear.
- Good TBN retention effectively neutralizing the acidic by-products from combustion.



Performance level

PETRONAS Urania URANIA 500 40

PETRONAS Urania URANIA 500 50

Benefits

PETRONAS Urania 500 SAE 40 delivers:

- Piston cleanliness & minimizing deposits build ups, protects engine from wear.
- Helps dispersing soot, hence reduces soot induced oil thickening.









| SAE grade | Specifications | Approvals | Performance level | SAE grade | Specifications | |
|-----------|----------------|-----------|-------------------|-----------|----------------|--|
| 40 | API CF | | | 50 | API CF | |

Benefits

PETRONAS Urania 500 SAE 50 delivers:

- Piston cleanliness & minimizing deposits build ups, protects engine from wear.
- Good TBN retention effectively neutralizing the acidic by-products from combustion.



Performance level

Oil Drain Intervals

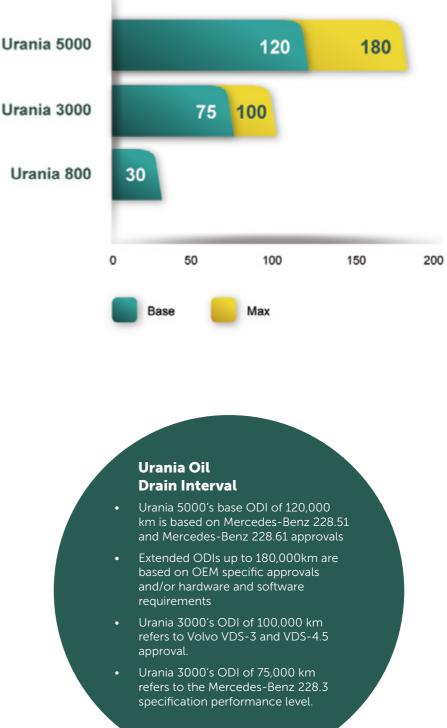
Oil Drain Intervals (ODI) are set by OEMs and are designed to protect the engine following a defined period of usage and exposure to a wide variety of conditions.

Today, many OEMs are striving towards an extended ODI.

It is a major selling point because longer intervals can provide truck owners and operators with cost and time savings thanks to reduced downtime and less business disruption – with vehicles staying out on the road for longer. However, it's important to remember that oil drain intervals are set for a reason, so extending them must be done safely. It means that the engine's lubrication must provide the strength to stay stronger for longer, while providing truck owners and operators with the confidence to keep going.

As the table on the right shows, PETRONAS Urania delivers impressive ODIs across the entire product range. The table refers to all products belonging to the Urania 5000, 3000, and 800 series, and the ODIs are based on the relevant OEM approvals and specifications. Please refer to the specific product design specifications for specific ODIs, and refer to the vehicle handbook for specific cases.

Urania Oil Drain Interval ('000 km)



Technical Summary

| Product | Benefit | Tests | | | | |
|-----------------------------------|---------------------|--|--|--|--|--|
| Urania 5000 LS-FE 5W-30 | Fuel Efficiency | Daimler In-House Fuel Efficiency Test | | | | |
| Urania 5000 LSF 5W-30 | Wear protection | OM 646 LA | | | | |
| JW-30 | Wear protection | OM 646 LA | | | | |
| Urania 5000 LS 10W-40 | | Mack T-12 | | | | |
| 100-40 | Wear protection | Mack T-13 | | | | |
| | wear protection | Caterpillar 1N | | | | |
| | | Caterpillar 1N | | | | |
| Urania 3000 LS 10W-30 \ 15W-40 | Wear protection | Cummins ISB | | | | |
| 10W-30 (15W-40 | Viscosity Retention | Volvo T-13 | | | | |
| Urania 3000 15W-40 | Engine Cleanliness | MB OM 501 LA test | | | | |
| | Viscosity retention | Sequence IIIF | | | | |
| | viscosity retention | Mack T-8E | | | | |

| Measure | Benchmark | Improvement |
|---------------------------------|------------------|-------------|
| Fuel Efficiency | MB Reference Oil | 0.5% |
| Cam Wear Outlet (µm) | ACEA E6 | 75% |
| OM 646 LA Cylinder Wear (µm) | MB 228 51 | 60% |
| Top Ring mass loss (mg) | API CK-4 | 38% |
| Top Ring mass loss (mg) | ACEA E6 | 44% |
| Oil Consumption (g/kWh) | API CK-4 | 74% |
| Deposits (merit) | API CK-4 | 47% |
| Slider Tappet Mass Loss (merit) | API CK-4 | 56% |
| % Increase Viscosity at 40°C | API CK-4 | 76% |
| Piston Cleanliness (merit) | MB 228.3 | 32% |
| Piston Cleanliness (merit) | ACEA E7 | 55% |
| Relative viscosity | API CI-4 | 68% |
| Relative viscosity | ACEA E7 | 34% |

OEM Fit Table

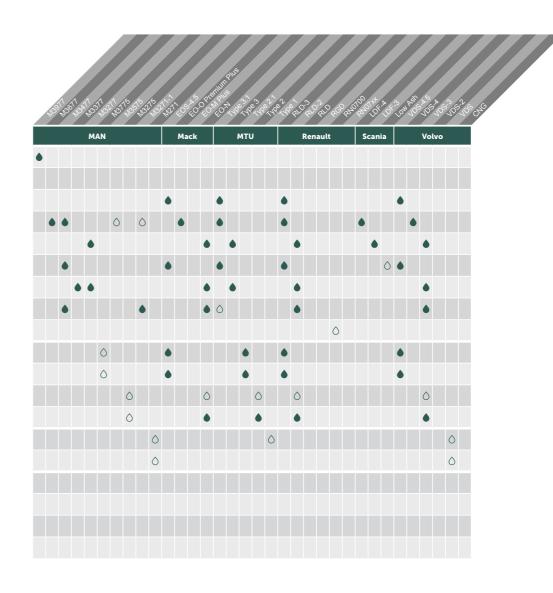
| Product | САТ | Cummins | DAF | Daimler -Mercedes | Deutz | Detroit Diesel |
|------------------|------------|------------|------------|----------------------|------------|-------------------|
| 5000 ECO 5W-20 | | | | | | |
| 5000 LS-FE 5W-30 | | \diamond | | ۲ | | \diamond |
| 5000 LSF 5W-30 | \Diamond | ۲ | \Diamond | ۲ | ۲ | \diamond |
| 5000 E 5W-30 | \diamond | ٠ | \Diamond | ٠ | ٠ | \diamond |
| 5000 F 5W-30 | | ٠ | \Diamond | ٠ | ۲ | |
| 5000 LS 10W-40 | \Diamond | ٠ | \diamond | ٠ | ٠ | \diamond |
| 5000 10W-40 | | ٠ | | ٠ | | |
| 5000 LSE 10W-40 | | \diamond | | ٠ | \Diamond | |
| 5000 LCV 5W-30 | | | | | | |
| 3000 LS 10W-30 | \Diamond | ٠ | \Diamond | ٠ | ۲ | \diamond |
| 3000 LS 15W-40 | \diamond | ٠ | \diamond | ٠ | ٠ | \diamond |
| 3000 10W-40 | \Diamond | \diamond | | \diamond | \Diamond | \diamond |
| 3000 15W-40 | \Diamond | ٠ | | ٠ | ٠ | ٠ |
| 800 15W-40 | | | | \diamond | \diamond | |
| 800 20W-50 | | | | \diamond | \Diamond | |
| 500 10W | | | | | | |
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Specs finder for CV range

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| 00 20W-50 | | | | | | | | | 0 | | | | | | |
| 00 10W | | | | | | | | | | | | | | | |
| 00 30 | | | | | | | | | | | | | | | |
| 00 40 | | | | | | | | | | | | | | | |
| 00 50 | | | | | | | | | | | | | | | |



Tutela Transmission Open Market Specs finder for CV

| | Product Name | SAE grade | ΑΡΙ | MIL | JASO | GM | SAE | Allison |
|-------------|---------------------|-----------|------------|------------|------|------------|-----|------------|
| | Axle 700 EHD 75W-90 | 75W-90 | \Diamond | \Diamond | | | ٠ | |
| Axle Fluids | Axle 300 80W-90 | 80W-90 | \Diamond | \Diamond | | | | |
| Axle F | Axle 300 LS 80W-90 | 80W-90 | \diamond | | | | | |
| | Axle 300 85W-140 | 85W-140 | \diamond | \Diamond | | | | |
| | ATF 900 HD | n.a. | n.a. | n.a. | | | | |
| | ATF 700 HD | n.a. | n.a. | n.a. | | \diamond | | \diamond |
| АТF | ATF 500 HD | n.a. | n.a. | n.a. | | \diamond | | \diamond |
| A | ATF D3 | n.a. | n.a. | n.a. | ٠ | \diamond | | |
| | ATF D2 | n.a. | n.a. | n.a. | | \diamond | | \diamond |
| | ATF TASA | n.a. | n.a. | n.a. | | \Diamond | | |
| MTF | MTF 700 HD 75W-80 | 75W-80 | \diamond | | | | | |
| ž | MTF 300 80W-90 | 80W-90 | \Diamond | | | | | |

| МВ | MAN | Scania | Volvo | Renault | DAF | Mack | ZF | Eaton | Voith | Arvin Meritor | ΝΑΤΟ |
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