

DURON™ HEAVY DUTY DIESEL ENGINE OILS

Introduction

Petro-Canada's DURON™ line of premium performance multigrade diesel engine oils deliver industry leading protection against increased wear which can lead to lower productivity and impaired fuel economy. They have been specifically designed to outperform ACEA E6, E7 and/or E9 performance requirements, as well as various API service requirements, like CK-4, CJ-4 and previous. These diesel engine oils exceed the highest standards of performance and provide extended drain capabilities and excellent all weather performance.

DURON heavy duty diesel engine oils deliver superior engine protection and operational efficiency. Made with base oils that are 99.9% pure, DURON outperforms API and ACEA requirements, as well as demanding OEM specifications to provide tangible benefits such as longer engine life, extended oil drain intervals*, better all weather performance and better efficiency resulting in increased productivity.

Features and Benefits

- **Ultimate wear protection**
 - Superior engine protection
 - Maximises uptime and helps lower maintenance costs
 - Extends drain intervals
- **Advanced Engine Protection**
 - Ultra pure, consistent quality base oils help minimize engine sludge and piston top groove deposits, thereby maintaining 'like new' engine conditions
 - Protection and performance that exceed the expectations of leading OEMs
- **Reduced oxidative thickening**
 - Helps maintain peak fuel economy
 - Extends drain intervals
 - Ensures continued low temperature protection
- **Better Low Temperature Pumpability**
 - Exceptional cold start-up protection
- **Better Shear Stability**
 - High Viscosity Index (VI) base oils and shear stable viscosity modifiers help maintain stay in grade viscosity performance for reduced engine wear and improved engine protection over the life of the oil
 - High oil film strength for high temperature protection
 - Exceptional after shear viscosity retention helps protect your engine
- **Reduced oil consumption**
 - Low volatility base oils decrease vaporisation so less oil is lost, efficiency is improved, and the oil retains more of its fresh oil properties
 - Reduces oil top-up frequency
- **Greater Piston Cleanliness**
 - Significantly reduces deposit-causing sludge
 - Helps maintain engine integrity, performance and efficiency
- **Better Resistance to Corrosion**
 - Helps maintain engine performance and efficiency
- **Advanced soot control**
 - Effectively controls and disperses particulate matter and soot while controlling viscosity increase
 - Helps reduce wear and maintain fuel economy

Product Line

DURON Next Generation heavy duty diesel engine oils listed here are formulated to exceed various ACEA, API, and OEM requirements. For a full list of Approvals and Recommendations, please see the following page.

DURON UHP E6 10W-40

DURON UHP E6 10W-40 is a high quality Ultra High Performance Diesel engine oil specifically designed to outperform ACEA E6 requirements and protect engines in severe conditions. With a full suite of approvals far exceeding major OEM requirements, DURON UHP E6 10W-40's performance is not just impressive – it's proven. DURON UHP E6 10W-40's unmatched quality provides exceptional engine protection, longer engine life, extended oil drain intervals, best-in-class all weather performance and better operating efficiency for many on-road and off-road applications.

DURON UHP 10W-40

As an Ultra High Performance synthetic all-weather heavy duty diesel engine oil, DURON UHP 10W-40 is designed to exceed ACEA E9 requirements and is approved to API CK-4 requirements, and provides excellent protection against engine wear while extending oil drain intervals. Its superior pumpability, excellent shear stability, outstanding engine wear control and oil top-up performance increase operating efficiency without compromising engine protection. DURON UHP 10W-40's combination of 99.9% pure base oils and additives can help make fleets more efficient by decreasing engine downtime and enhancing reliability.

DURON SHP 15W-40

DURON SHP 15W-40 is formulated with a synthetic base oil blend and high-performance additive package to exceed ACEA E7 and E9 standards, and is approved for API CK-4. It has been designed to deliver exceptional engine protection and all weather performance. Excellent shear stability and low temperature pumpability help deliver comprehensive protection to vital engine parts while promoting engine performance in a wide range of operating conditions. Thanks to DURON SHP 15W-40's 99.9% pure base oils, fresh oil properties are preserved longer, allowing for increased time between oil drain intervals and reduced oil top-ups.

What is the HT difference?

Petro-Canada Lubricants starts with the HT purity process to produce water-white, 99.9% pure base oils. The result is a range of lubricants, specialty fluids and greases that deliver maximum performance for our customers.



*Extending drain intervals should always be undertaken in conjunction with an oil analysis program.

DURON HP 15W-40

In addition to exceeding ACEA E9 standards and approval for API CK-4, DURON HP 15W-40 demonstrates excellent all weather performance including dependable cold start-up performance and exceptional shear stability. This helps minimize engine wear and oil consumption for maximum efficiency. DURON HP 15W-40's 99.9% pure base oils contribute to its proven extended oil drain capabilities in severe service conditions and helps keep fleets in service for longer, while protecting critical engine parts.

DURON SHP 10W-30

DURON SHP 10W-30 is a Super High Performance synthetic blend heavy duty engine that delivers advanced engine protection and all-weather performance. It provides optimal engine durability and can deliver up to 1%* fuel economy performance. DURON SHP 10W-30 keeps its fresh oil properties longer allowing for extended drains (versus OEM standard intervals)† and reduced need for top-up oil.

DURON UHP E6 5W-30

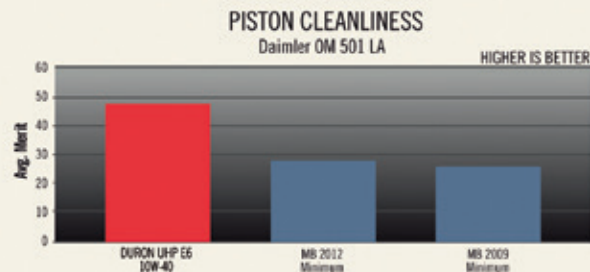
DURON UHP E6 5W-30 is an API CJ-4/SN Ultra High Performance full synthetic heavy duty diesel engine oil specially formulated with synthetic base oils and high performance additives to deliver up to 2x** better engine protection and up to 4%*** fuel economy savings. DURON UHP E6 5W-30 is specifically designed to maintain its fresh oil properties longer, allowing it to provide the maximum amount of protection in both standard and extended drain intervals†.

DURON UHP 0W-40

DURON UHP 0W-40 is an Ultra High Performance heavy duty engine oil specially formulated with a high performance additive system in combination with high quality synthetic base oils. DURON UHP 0W-40 may be used in extended oil drain interval service in extreme cold climates†.

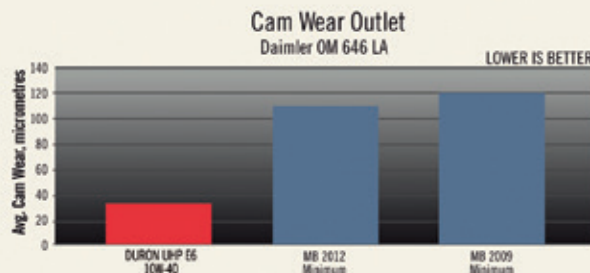
ENGINE PROTECTION

This engine test measures how well the engine oil maintains engine cleanliness in severe conditions. Greater piston cleanliness means your engine performs more efficiently and with more power.



DURON UHP E6 surpasses MB 2012 engine cleanliness specifications by 160%.

This engine test measures how well the engine oil prevents engine wear in severe conditions. By reducing the wear on engine parts – the engine maintains 'like-new' conditions, providing you with increased operating efficiency and reliability.



DURON UHP E6 surpasses MB 2012 engine wear specifications by 300%.

Testing completed August, 2012.

DURON UHP 0W-30

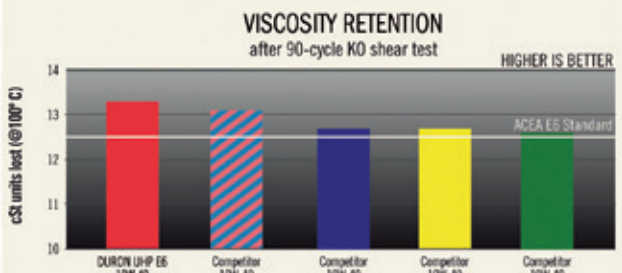
DURON UHP 0W-30 is formulated for extreme cold service operations where reduced wear through ease of start-up and is the ultimate priority. It is an Ultra High Performance heavy duty engine oils with top performance additives and high quality synthetic base oils that can help users extend oil drain intervals†.

DURON UHP 5W-40

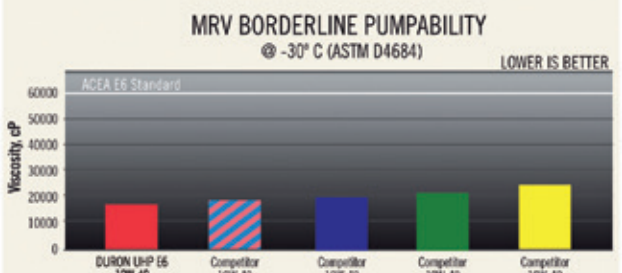
DURON UHP 5W-40 is an Ultra High Performance full synthetic heavy duty engine oil that provides excellent protection and performance, especially in low temperature environments. It helps conserve energy and reduces engine wear through ease of cold weather start-up and lower viscous drag while maintaining a strong oil film in service.

ALL WEATHER PERFORMANCE

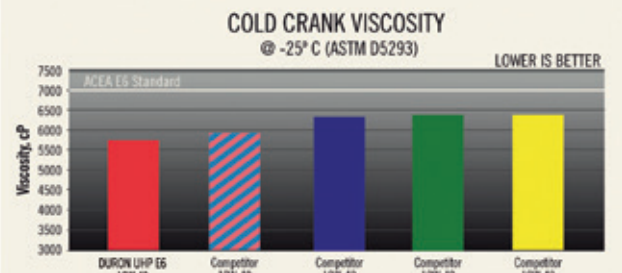
The Viscosity Loss test simulates shear that can occur in the engine under regular operating conditions. Consistent wear protection promotes longer engine life, reduced oil consumption and lower cost per kilometre.



The MRV Pumpability test measures how easily the oil flows through the engine after start-up in low temperatures. The lower the number the less resistance there is to oil flow. And the faster oil gets distributed to critical moving parts, in cold weather environments where engine starts are crucial.



Cold Crank Viscosity measures ease of starting in low temperatures. Lower cranking resistance means faster, easier starting, which helps protect your starter and battery.



DURON UHP E6 demonstrates best in class all-weather performance.

Competitive benchmarking completed August, 2012.

When benchmarking, Petro-Canada always tests competitive products against industry recognized standards. This means using recognized industry tests, matching product classes, and matching the products being tested as closely as possible by 1) Base Oil Quality (full synthetic vs. synthetic blend vs. conventional), 2) Viscosity Grade (15W-40 vs. 10W-40), and 3) ACEA performance categories (E4, E6, E7, E9).

† Extending drain intervals should always be undertaken in conjunction with an oil analysis program.


















*Comparing 15W-40 with 4.1cP HTHS vs 10W-30 with 3.5cP HTHS.

** Based on results from the Daimler OM 646 LA industry recognized test.

*** Fuel economy results are based on the generally accepted and industry recognized SAE J1321 Type II fuel consumption test. Comparison of fuel economy is relative to DURON-E 15W-40, and in combination with TRAXON™ Synthetic 75W-90 (relative to TRAXON 85W-140) gear oil. Actual results are dependent on external factors including, but not limited to: driving terrain, weather conditions, tire pressure and severity of operating conditions.

Approvals and Recommendations

★ Approved ● Suitable For Use ✓ Meets Specifications

PRODUCTS	DURON UHP E6 10W-40	DURON UHP 10W-40	DURON HP 15W-40	DURON SHP 15W-40	DURON SHP 10W-30	DURON UHP E6 5W-30	DURON UHP 0W-40	DURON UHP 0W-30	DURON UHP 5W-40
	✓ E6, E7, E9	✓ E7, E9	✓ E7, E9	✓ E7, E9	✓ E7, E9	✓ E6, E7, E9			
	✓ CI-4	★ CK-4 / SN	★ CK-4 / SN	★ CK-4 / SN	★ CK-4 / SN*	★ CJ-4 / SN	● CK-4 / SN	● CK-4 / SN	★ CK-4 / SN
		✓ ECF-3, TO-2	✓ ECF-3, TO-2	✓ ECF-3, TO-2	✓ ECF-3, TO-2	✓ ECF-3	● ECF-3, TO-2	● ECF-3, TO-2	✓ ECF-3, TO-2
		★ CES 20086	★ CES 20086	★ CES 20086	★ CES 20086	★ CES 20081	● CES 20086	● CES 20086	★ CES 20086
	✓ Standard Drain ● Extended Drain	● Standard Drain	● Standard Drain	● Standard Drain	● Standard Drain	✓ Standard and Extended Drain			
		★ DFS 93K222	★ DFS 93K222	★ DFS 93K222	★ DFS 93K222	★ DFS 93K218			★ DFS 93K222
	★ DQC III-10 LA	★ DQC III-10 LA**				★ DQC IV-10 LA			
		★ WSS-M2C171-F1	★ WSS-M2C171-F1	★ WSS-M2C171-F1	★ WSS-M2C171-F1				★ WSS-M2C171-F1
		● 9985930		● 9985930	● 9985930				
		● MA, MA2, DH-1	● MA, MA2, DH-1	● MA, MA2	● MA, MA2, DH-1	● DH-1	● MA, MA2	● MA, MA2	
	★ EO-N	★ EOS-4.5	★ EOS-4.5	★ EOS-4.5	★ EOS-4.5	★ EO-O PP '07			★ EOS-4.5
	★ 3477, 3275-1		● 3575, 3275-1	● 3575, 3275-1		★ 3477 ● 3677**			
	★ 228.51		★ 228.31	★ 228.31	★ 228.31	★ 228.51			
	★ Type 3.1	★ Type 2.1	★ Type 2.1	★ Type 2.1		★ Type 3.1			
	★ RLD-2	★ RLD-4	★ RLD-4	★ RLD-4	★ RLD-4	★ RLD-3			★ RLD-4
	● LA***					● LA**			
	★ VDS-3	★ VDS-4.5	★ VDS-4.5	★ VDS-4.5	★ VDS-4.5	★ VDS-4			★ VDS-4.5

* Use of a diesel engine oil for gasoline applications may compromise the life of the emissions device. Please refer to the owner's manual to ensure proper oil is used.

** Approval pending with proven technology

*** Meets Scania low ash requirements

Applications

Car and Light Duty Diesel Engines

DURON engine oils are also suitable for use in diesel powered engines in smaller vehicles, including passenger cars and light trucks where API CK-4, CJ-4, CI-4 Plus, CI-4, CH-4 or earlier specifications are required. Consult your owner's manual.

Gasoline and CNG Engines

Many of the DURON diesel engine oils exceed the latest API SN gasoline engine oil specification and are suitable for some gasoline and CNG applications where API SN or earlier specifications are required. Many are also suitable for use in wet clutch applications where JASO MA or MA2 is recommended. Please reference the Approvals and Recommendations list on the previous page to ensure you are using the correct product for your application.

Stationary & Marine type Diesel Engines

DURON HP and SHP 15W-40's may be used in diesel-fuelled stationary and marine systems where an SAE 15W-40 diesel engine oil is specified and water separation is not required.

Typical Performance Data

PROPERTY	ASTM TEST METHOD	DURON UHP E6 10W-40	DURON UHP 10W-40	DURON HP 15W-40	DURON SHP 15W-40	DURON SHP 10W-30	DURON UHP E6 5W-30	DURON UHP 0W-40	DURON UHP 0W-30	DURON UHP 5W-40
Flash Point, COC, °C	D92	237	229	228	226	220	231	224	220	235
Kinematic Viscosity cSt @ 40°C cSt @ 100°C	D445	92.8 14.2	107 15.5	118 15.6	114 15.4	80.1 12.0	67.3 11.4	82 14.5	65.2 11.5	95.1 14.3
Viscosity Index	D2270	157	157	139	142	145	165	180	173	169
High Temp/High Shear Viscosity cP @ 150°C	D4683	4.1	4.1	4.1	4.1	3.5	3.5	3.9	3.4	3.8
Cold Cranking Viscosity, cP @ °C	D5293	5750 (-25)	5930 (-25)	5540 (-20)	5000 (-20)	5570 (-25)	5875 (-30)	5900 (-35)	5400 (-35)	5900 (-30)
Pour Point, °C	D5950	-39	-42	-36	-36	-42	-45	-45	-45	-45
Borderline Pumping Viscosity cP @ °C	D4684	17320 (-30)	27450 (-30)	21350 (-25)	19880 (-25)	18160 (-30)	16000 (-35)	28300 (-40)	19600 (-40)	30370 (-35)
Sulphated Ash, % wt	D874	1.0	1.0	1.0	1.0	1.0	< 1.0	1.0	1.0	1.0
Base No. (BN), mg KOH/g	D2896	9.5	10.0	9.8	9.8	10.0	9.6	9.5	9.7	11

The values quoted above are typical of normal production. They do not constitute a specification.

To order product or to learn more about how Petro-Canada Lubricants can help your business visit: lubricants.petro-canada.com or contact us at: lubecsr@petrocanadalsp.com



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