

DURON™-E API CJ-4 HEAVY DUTY ENGINE OILS



Introduction

Petro-Canada's DURON-E line of premium performance multigrade engine oils delivers industry leading protection against the costly effects of soot - which can range from increased wear to lower productivity and impaired fuel economy. They're formulated to exceed API CJ-4 requirements and are suitable for use in the latest 2010 EPA compliant low emission engines which employ advanced exhaust after treatment devices such as Diesel Particulate Filters (DPF) with or without Diesel Oxidation Catalysts (DOC), increased rates of Exhaust Gas Recirculation (EGR) and Selective Catalytic Reduction (SCR). DURON-E heavy duty engine oils are suitable for use in engines powered by both ultra low and low sulphur diesel fuel. DURON-E is back serviceable and carries the API CI-4 Plus, CI-4, and CH-4 licenses required by pre-'07 diesel engines.

DURON-E is formulated from one of the purest base oils in the world; the result of our HT purity process to produce 99.9% pure base oils. That purity helps maximize the effectiveness of the oil's soot controlling chemistry and high performance additive system. DURON-E is formulated to the highest API diesel and gasoline performance standards for 4-Stroke engine oils and is suitable for use in extended oil drain service. Extending drain intervals should always be undertaken with good operating practices and maintenance programs including a regular oil analysis program. Contact your Petro-Canada technical representative for additional information and assistance.

Features and Benefits

DURON-E Heavy Duty Engine Oils offer a number of premium performance features which include:

- **Advanced soot control**
 - Helps prevent soot agglomeration, which:
 - Minimizes soot related engine wear
 - Minimizes soot related viscosity increase, resulting in better maintenance of fuel economy and cold temperature performance and protection
- **Maintains shear stability**
 - High oil film strength for high temperature protection
 - Exceptional after shear viscosity retention helps protect your engine
- **Reduced oxidative thickening**
 - Extends drain intervals
 - Maintains low temperature performance
- **Reduced valve train wear**
 - Helps extend engine life
- **Reduced piston deposits**
 - Excellent engine protection
 - Helps maintain engine power and fuel efficiency
- **Corrosion protection**
 - Helps reduce engine corrosion, particularly in idling equipment
- **Reduced oil consumption**
 - Reduces the need for top-up oil
- **Emission system friendly**
 - Low ash formula helps prevent premature DPF plugging and shortened maintenance intervals

What is the HT difference?

Petro-Canada 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.



Product Line

DURON-E Synthetic 10W-40

Full synthetic all-weather heavy duty diesel engine oil. Formulated with a proprietary additive system, DURON-E Synthetic 10W-40 is designed to provide industry leading soot control, which results in exceptional protection against engine wear and extended drain performance (exceeding OEM standard intervals)* even in the harshest operating conditions and maximum allowable load conditions. It combines superior pumpability at -35°C (5W grade requirement) and excellent shear stability with excellent engine wear control and oil top-up performance. DURON-E Synthetic 10W-40 can potentially help improve fuel economy through ease of start-up, lower viscous drag and avoidance of the need for idling.

DURON-E Synthetic 5W-40

DURON-E Synthetic 5W-40 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.

DURON-E XL 15W-40

DURON-E XL 15W-40 is formulated with a synthetic base oil blend and high-performance additives to deliver exceptional soot control and all-weather performance. Outstanding shear stability and excellent low temperature pumpability combine with the soot controlling formulation to deliver comprehensive protection to vital engine parts over a wide range of operating conditions. And because DURON-E XL 15W-40 keeps its fresh oil properties longer, it can help extend drain intervals (versus OEM standard intervals)* and reduce the need for top-up oil.

DURON-E 15W-40

DURON-E 15W-40 offers advanced soot controlling capabilities. It also demonstrates excellent all-weather performance including dependable cold start-up performance and exceptional shear stability, minimizes engine wear and oil consumption. It has demonstrated extended drain capabilities (exceeding OEM standard intervals)* while subjected to severe service conditions.

DURON-E XL 10W-30

DURON-E XL 10W-30 is formulated with a synthetic base oil blend and high performance additives to deliver advanced soot controlling capabilities and all-weather performance. It provides optimal engine durability while potentially helping to increase fuel economy by up to 1%†. It provides CJ-4/SM performance in a 10W-30 viscosity grade and protects exhaust catalysts and filters. And because DURON-E XL 10W-30 keeps its fresh oil properties longer, it can help extend drain intervals (versus OEM standard intervals)* and reduce the need for top-up oil.

DURON-E 10W-30

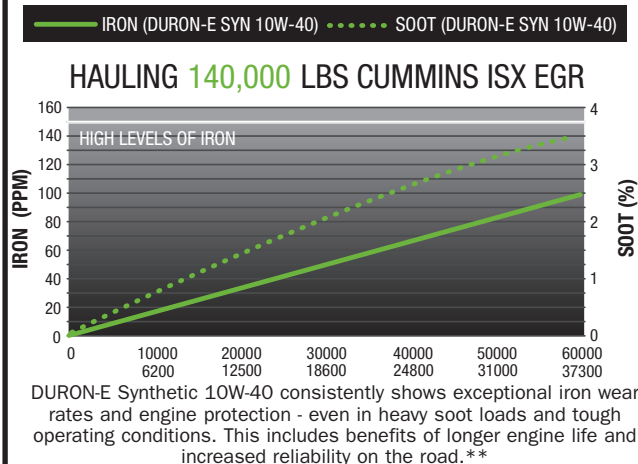
DURON-E 10W-30 delivers advanced soot control, all-weather performance and is field proven to deliver similar protection to DURON-E 15W-40. This oil can potentially help increase fuel economy by up to 1%†. It provides CJ-4/SM performance in a 10W-30 viscosity grade and protects exhaust catalysts and filters.

†Compared to DURON-E 15W-40 results obtained from VOLVO D12D test.

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

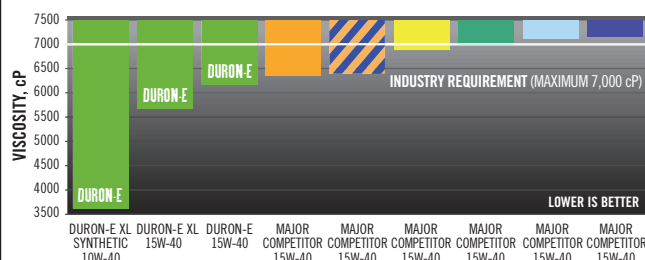
** Results shown above are based on used oil analysis data from large on-highway fleet Cummins ISX EGR engine. Results are not guaranteed and can vary due to many factors including, but not limited to: equipment make, model, age and condition; maintenance practices; driver behaviour; load; and operating conditions.

EXCEPTIONAL WEAR PROTECTION



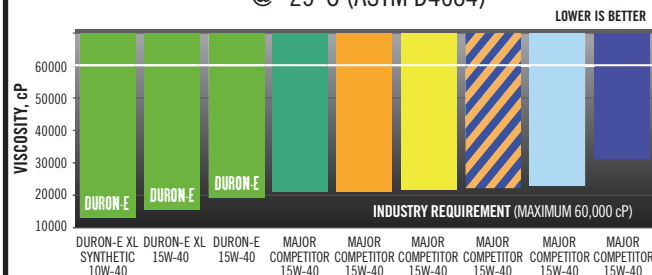
COLD CRANK VISCOSITY

@ -20°C (ASTM D5293)



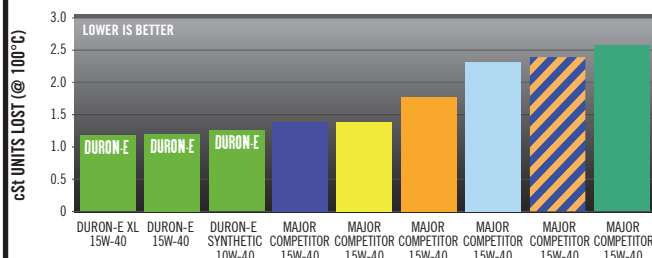
MRV BORDERLINE PUMPABILITY

@ -25°C (ASTM D4684)



VISCOSITY LOSS

AFTER 90-CYCLE K.O. SHEAR TEST (ASTM D7109)



Gives your engines superior protection in all-weather conditions. DURON-E consistently outperforms the competition by demonstrating exceptional all-weather performance - including premium performance in both high and low temperatures.

Approvals and Recommendations

■ Approved
□ Suitable For Use

Approvals	DURON-E Synthetic 10W-40	DURON-E Synthetic 5W-40	DURON-E XL 15W-40	DURON-E 15W-40	Duron-E XL 10W-30	DURON-E 10W-30
ACEA						
ACEA E9 - 08	□		□	□		
ACEA E7 - 08	□		□			
ACEA E7 - 04	□		□	□		
API						
API CJ-4	■	■	■	■	■	■
API CI-4 PLUS	■	■	■	■	■	■
API CI-4	■	■	■	■	■	■
API CH-4	■	■	■	■		
API SN				■	■	■
API SM	■	■	■			
API SL	□	□	□	□	□	□
Caterpillar						
Caterpillar TO-2	□	□	□	□	□	□
Caterpillar ECF-1-a	□	□	□	□	□	□
Caterpillar ECF-2	□	□	□	□	□	□
Caterpillar ECF-3	□	□	□	□	□	□
Caterpillar SEBU 6385	□	□	□	□	□	□
Cummins						
Cummins CES 20076	□		□	□	□	□
Cummins CES 20077	□	□	□	□	□	□
Cummins CES 20078	□	□	□	□	□	□
Cummins CES 20081	■	■	■	■	■	■
Detroit Diesel						
Detroit Diesel DFS 93K214		□	□	□		
Detroit Diesel DFS 93K215		□	□	□		
Detroit Diesel DFS 93K218	■	■	■	■	■	■
Detroit Diesel, 7SE273 (Series 2000/4000)				■		
Ford						
Ford M2C171-C	□		□	□		
Ford M2C171-D	□		□	□		
Ford WSS-M2C171-E	□		□	□		
Mack						
Mack EO-M / EO-M Plus	□		□	□		
Mack EO-N PP	□		□	□		
Mack EO-N PP '03	□	□	□	□		
Mack EO-O PP '07	■	■	■	■	■	■
Volvo						
Volvo VDS-2	□	□	□	□	□	□
Volvo VDS-3	□	□	□	□	□	□
Volvo VDS-4	■	■	■	■	■	■
Other						
DEUTZ DQC III-10 LA	■					
General Motors 9985930	□		□			
JASO DH-1, DH-2	□		□			
JASO MA, MA2	□		□	□	□	□
MAN 3575				□		
MAN 3275-1				■		
MB 228.1 / MB 228.3				□		
MB 228.31				■		
MTU Type 2				□		
MTU Type 2.1				■		
Renault VI RLD-3	■	■	■	■	■	■

* Detroit Diesel recommends an SAE 40 grade only for 2-stroke cycle engines, except where starting aids are not available or at very cold temperatures, when the use of an SAE 15W-40 or SAE 30 will facilitate starting.

Applications

Car and Light Duty Diesel Engines

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

Gasoline and CNG Engines

DURON-E 15W-40 and DURON-E 10W-30 exceeds the latest API SN gasoline engine oil specification and is suitable for gasoline and CNG applications where API SN or earlier specifications are required. Suitable for use in wet clutch applications where JASO MA or MA2 is recommended.

Typical Performance Data

PROPERTY	ASTM TEST METHOD	DURON-E SYNTHETIC 10W-40	DURON-E SYNTHETIC 5W-40	DURON-E SYNTHETIC 0W-40	DURON-E XL 15W-40	DURON-E 15W-40	DURON-E XL 10W-30	DURON-E 10W-30
Flash Point, °C / °F	D92	239 / 462	235 / 450	229 / 444	235 / 455	235 / 455	239 / 462	235 / 455
Kinematic Viscosity cSt @ 40°C / SUS @ 100°F cSt @ 100°C / SUS @ 210°F	D445	103 / 525 15.2 / 79.9	95.1 / 484 15.2 / 79.7	85.9 / 436 14.8 / 78.1	114 / 586 15.5 / 81.2	118 / 609 15.6 / 81.5	77.2 / 394.8 11.7 / 66.0	79 / 405 11.8 / 66.2
Viscosity Index	D2270	156	169	182	144	139	145	144
High Temp/High Shear Viscosity cP @ 150°C	D4683	4.4	4.2	4.1	4.5	4.4	3.6	3.6
Cold Cranking Viscosity, cP @ °C	D5293	6150 (-25 / -13)	6100 (-30 / -22)	4784 (-35 / -31)	5673 (-20 / -4)	6170 (-20 / -4)	5700 (-25 / -13)	5740 (-25 / -13)
Pour Point °C / °F	D5950	-45 / -49	-48 / -54	-57 / -71	-39 / -38	-42 / -44	-48 / -54	-45 / -49
Borderline Pumping Viscosity cP @ °C/°F	D4684	20040 (-30 / -22)	23200 (-35 / -31)	25640 (-40 / -40)	15950 (-25 / -13)	18970 (-25 / -13)	16500 (-30 / -22)	16060 (-30 / -22)
Sulphated Ash, % wt	D874	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Base No. (TBN), mg KOH/g	D2896	10.3	8.9	8.5	10.3	8.3	8.6	8.6

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

Health and Safety

To obtain Material Health and Safety Data Sheets, contact one of Petro-Canada's TechData Info Lines.

TechData Info Lines

To place an order, please call a Customer Order Management Representative at :

Canada (English) Phone 1-800-268-5850
(French) Phone 1-800-576-1686
United States Phone 1-877-730-2369
Latin America Phone +1-416-730-2369
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You can also e-mail us at lubecsr@suncor.com



To learn more about how Petro-Canada lubricants, specialty fluids, oils and greases can help maximize your equipment performance, savings and productivity, please contact us at :

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