



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

Introduction

Petro-Canada DURON-E multigrade engine oils are premium heavy duty engine oils that exceed the current requirements of API CJ-4 and are suitable for use in '07 EPA compliant low emission engines which employ advanced exhaust after treatment devices such as diesel particulate filters (DPFs) with or without diesel oxidation catalysts (DOCs), and increased rates of Exhaust Gas Recirculation (EGR). DURON-E heavy duty engine oils are also suitable for use in engines powered by both ultra low and low sulphur diesel. DURON-E is back serviceable and carries the API CI-4 Plus, CI-4, CH-4 licenses required by pre-'07 diesel engines.

DURON-E is specially formulated with a unique high performance additive system in combination with the patented HT purity process to produce 99.9% pure, crystal-clear base oils - one of the purest in the world. DURON-E is formulated to the highest 4-stroke diesel and gasoline engine oil standards and is ideal for use in extended oil drain interval service. The keys to success in extending service intervals are good operating practices and maintenance programs including a regular oil analysis program. Contact your Petro-Canada technical representative for additional information and assistance.

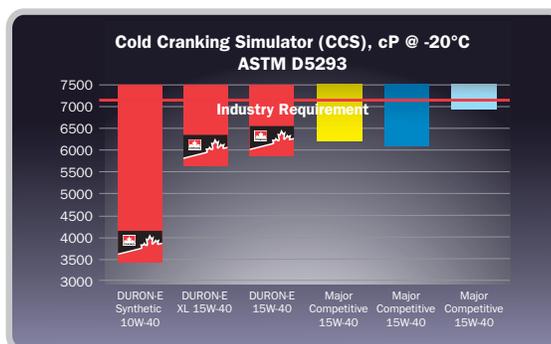
Features and Benefits

DURON-E CJ-4 Heavy Duty Engine Oil offers a number of performance upgrades versus the earlier CI-4 Plus/CI-4 category:

- **Maintains shear stability**
 - High oil film strength for high temperature protection
 - Stays in grade and protects your engine
 - **Reduced oxidative thickening**
 - Extends drain intervals
 - Maintains low temperature performance
 - **Reduced oil consumption**
 - Reduces the need for top-up oil
 - **Reduced valve train wear**
 - Extends engine life
 - **Reduced piston deposits**
 - Advanced engine protection
 - Maintains engine power and fuel efficiency
 - **Corrosion protection**
 - Reduces engine corrosion, particularly in idle equipment
- **Emission system friendly**
 - Prevents premature DPF plugging and shortened maintenance intervals
 - **Enhanced soot control**
 - Reduces oil thickening and related engine wear

What is the HT difference?

Petro-Canada starts with the patented 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.



DURON-E provides better extreme low temperature fluidity than its competitors. That gives you better protection from wear and better fuel economy during cold start-ups.

Applications

| PETRO-CANADA HDEO RECOMMENDED APPLICATIONS CHART | | | | |
|--|--------------------------|-------------------|----------------|----------------|
| Approvals | DURON-E Synthetic 10W-40 | DURON-E XL 15W-40 | DURON-E 10W-30 | DURON-E 15W-40 |
| API CJ-4 | • | • | • | • |
| API CI-4 Plus | • | • | • | • |
| API CI-4 | • | • | • | • |
| API CH-4 | • | • | • | • |
| API SM | • | • | • | • |
| API SL | • | • | | • |
| API SJ | • | • | | • |
| API SH | • | • | | • |
| Deutz DQC III-05 | • | | | |
| Mack EO-O Premium Plus '07 | • | • | | • |
| Mack EO-N Premium Plus '03 | • | • | | • |
| Mack EO-N Premium Plus | • | • | | • |
| Mack EO-M/EO-M Plus | • | • | • | • |
| MAN 3275 | | | | • |
| MTU Type 2.1 | | | | • |
| Caterpillar ECF-3 | • | • | • | • |
| Caterpillar ECF-2 | • | • | • | • |
| Caterpillar ECF-1-a | • | • | • | • |
| JASO MA / MA2 | • | • | • | • |
| Cummins CES 20081 | • | • | • | • |
| Detroit Diesel Power Guard 93K218 | • | • | | • |
| Detroit Diesel Power Guard 93K214 | • | • | | • |
| Volvo VDS-4 | • | • | • | • |
| Volvo VDS-3 | • | • | • | • |
| Volvo VDS-2 | • | • | • | • |
| Credentials | DURON-E Synthetic 10W-40 | DURON-E XL 15W-40 | DURON-E 10W-30 | DURON-E 15W-40 |
| MB 228.31 | | | | • |
| ACEA E7 – 2008 | • | • | | • |
| ACEA E9 – 2008 | • | • | | • |
| Renault VI RLD-3 | • | • | • | • |

Product Line

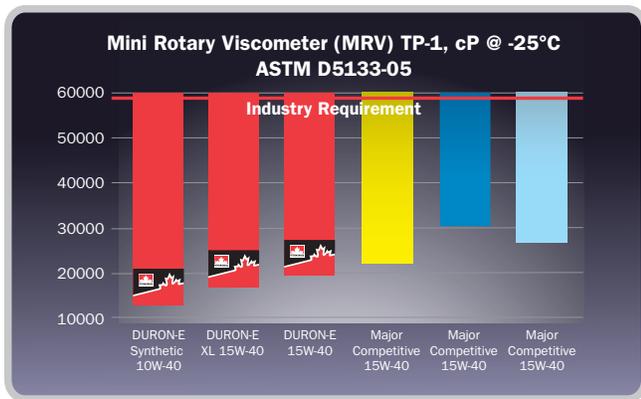
DURON-E Synthetic 10W-40

Full synthetic all-season all fleet heavy duty diesel and gasoline engine oil. Formulated with a premium additive system, Duron-E Synthetic 10W-40 is designed to give premium soot dispersancy and extended drain performance (exceeding OEM standard intervals)*. It improves fuel economy through ease of start-up and lower viscous drag. It combines superior pumpability at - 35°C (5W grade requirement) with excellent engine wear control and oil top-up performance.

DURON-E XL Synthetic Blend 15W-40

DURON-E XL is manufactured with a synthetic base oil blend and high performance additives, delivering premium soot dispersancy control while extending drain intervals (exceeding OEM standard intervals)* even in maximum allowable load conditions. It also gives very good cold start-up performance and reduces the need for top-up oil. Vital engine parts are protected when you use DURON-E XL Synthetic Blend 15W-40 in your engine.

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



DURON-E provides better ability to pump oil at cold temperatures than its competitors. The higher the viscosity, the thicker the engine oil.

DURON-E 10W-30

DURON-E 10W-30 delivers very good soot dispersancy and cold start-up performance. It provides CJ-4/SM performance in a 10W-30 viscosity grade and protects exhaust catalysts and filters.

DURON-E 15W-40

DURON-E 15W-40 provides the same Fight Soot, Save Money performance you have come to expect with oils bearing the DURON name along with the thermal stability required by the '07 EPA compliant low emission engine designs. It also demonstrates good cold start-up performance, minimizes engine wear and oil consumption. Demonstrated extended drain capabilities (exceeding OEM standard intervals)* while subjected to severe service conditions.

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 exceeds the latest gasoline engine oil specification and is suitable for use in passenger cars and light duty truck applications where API SM 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 | XL 15W-40 | 10W-30 | 15W-40 |
| Flash Point, °C / °F | D92 | 235 / 455 | 231 / 448 | 233 / 451 | 230 / 446 |
| Kinematic Viscosity cSt @ 40°C / SUS @ 100°F cSt @ 100°C / SUS @ 210°F | D445 | 99 / 506 15.1 / 79 | 115 / 591 15.5 / 81 | 78 / 172 11.6 / 53 | 117 / 600 15.4 / 81 |
| Viscosity Index | D2270 | 160 | 142 | 142 | 139 |
| High Temp/High Shear Viscosity cP @ 150°C | D4683 | 4.3 | 4.4 | 3.4 | 4.3 |
| Cold Cranking Viscosity, cP @ °C | D5293 | 5957 (-25°C / -13°F) | 5686 (-20°C / -4°F) | 6159 (-25°C / -13°F) | 6000 (-20°C / -4°F) |
| Pour Point, °C / °F | D5950 | (-48 / -54) | (-45 / -49) | (-45 / -49) | (-42 / -44) |
| Borderline Pumping Viscosity cP @ °C | D4684 | 34588 (-30°C / -22°F) | 18922 (-25°C / -13°F) | 18690 (-30°C / -22°F) | 25238 (-25°C / -13°F) |
| Sulphated Ash, % wt | D874 | < 1.0 % | < 1.0 % | < 1.0 % | < 1.0 % |
| Total Base No. (TBN), mg KOH/g | D2896 | 10.3 | 10.3 | 8.6 | 8.3 |

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

If you would like to know more about Petro-Canada DURON-E heavy duty engine oils, or any other product in our complete line of quality lubricants, please contact us at:

Lubricants Head Office
Petro-Canada
2310 Lakeshore Road West
Mississauga, Ontario
Canada L5J 1K2



Canada - West Phone 1-800-661-1199
- East (English) Phone 1-800-268-5850
 (French) Phone 1-800-576-1686
Other Areas Phone (416) 730-2408
E-mail lubecsr@petro-canada.ca
Internet lubricants.petro-canada.ca

Petro-Canada Europe Lubricants
The Manor, Haseley Business Centre
Warwick, Warwickshire
CV35 7LS

United Kingdom

Phone +44 (0) 2476-247294
Fax +44 (0) 2476-247295

Petro-Canada America Lubricants

980 North Michigan Avenue
Suite 1400, #1431

Chicago, Illinois

USA 60611

Phone 1-888-284-4572
Fax (708) 246-8994
E-mail email@petro-canadaamerica.com

Petro-Canada Asia Pacific Holding Company Ltd.

Jia Shi Lubricants Trading (Shanghai) Co. Ltd

1908 World Trade Tower

500 Guangdong Road

Huangpu District

Shanghai

China 200001

Phone +86 21 6362 0066
Fax + 86-21-6362 0536
Web www.petrocanada.cn
Email asiapacific@petro-canada.ca