



LUBRICANTS

AN HF SINCLAIR BRAND

TECH DATA

ENDURATEX™ SYNTHETIC EP

PREMIUM SYNTHETIC HEAVY DUTY INDUSTRIAL GEAR LUBRICANTS

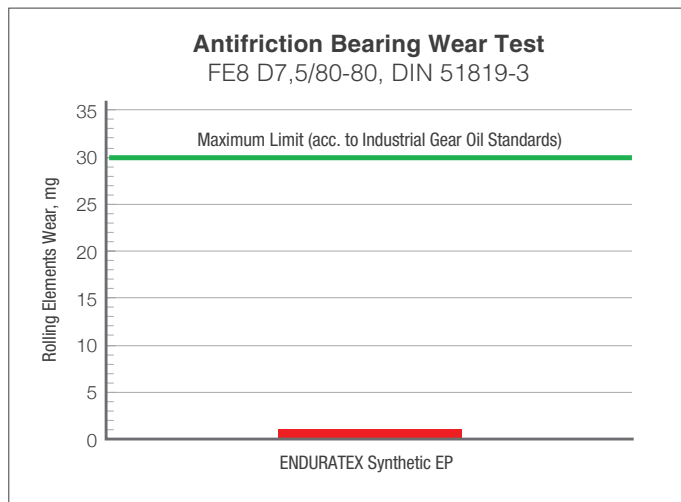
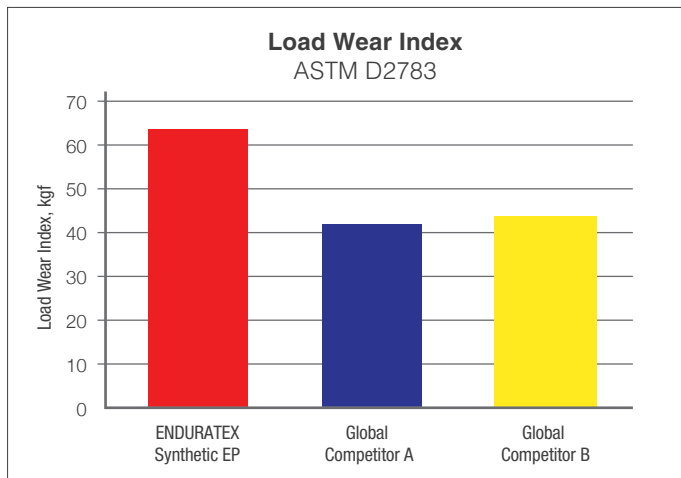
INTRODUCTION

Petro-Canada Lubricants ENDURATEX Synthetic EP gear oils are premium performance, extreme pressure lubricants designed for enclosed industrial gears and bearings operating under severe load conditions and in extreme temperatures. ENDURATEX Synthetic EP gear oils are capable of maintaining a strong tribo-film and providing balanced frictional properties suitable for both industrial gears and wet brakes applications. Formulated with synthetic PAO base oils and specially selected additive technologies, ENDURATEX Synthetic EP gear oils deliver excellent micropitting and wear protection, seals and coatings compatibility, and wide temperature performance that can extend components and fluid life and enhance efficiency.

FEATURES AND BENEFITS

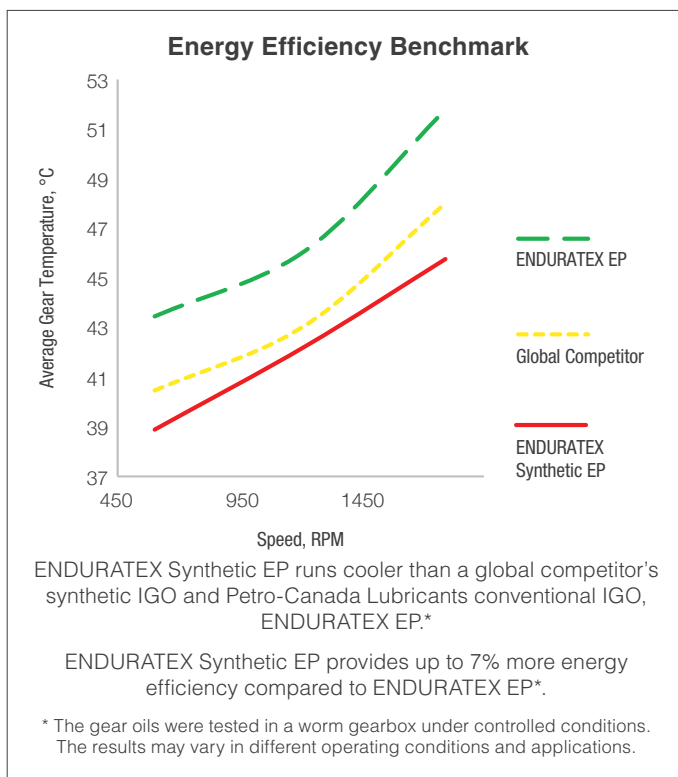
Outstanding extreme pressure and wear protection

- Extends gears and bearings life by providing resistance to micropitting fatigue, seizure, scuffing or spalling of gear teeth and bearings under high load conditions



Outstanding mechanical and energy efficiency

- Provides inherently low traction properties suitable for both industrial gears and wet brakes applications
- Runs cooler than conventional (mineral) industrial gear oils (IGOs) while maintaining exceptional lubricant film strength



Excellent foam and air release performance

- Provides superior defoaming and air release properties for gearbox systems

Wide range of service temperature

- Provides good low temperature properties and inherent high viscosity index (VI)
- Increases power throughput and efficiency by enduring a wide range of operating temperature

Excellent rust and corrosion prevention

- Provides excellent resistance to rust and copper corrosion that enhances component durability and extends gearbox life

Superior oxidation stability and durability

- Provides resistance to thermal and oxidative degradation and deposit formation.
- Extends drain intervals that lowers total cost of equipment maintenance

Excellent seals, coatings and adhesives compatibility

- Provides excellent compatibility with seals and elastomer materials that expands equipment life and minimizes downtime
- Fulfills the requirements of major gear OEM specifications for coatings and adhesives compatibility

APPLICATIONS

Petro-Canada Lubricants ENDURATEX Synthetic EP gear oils are recommended for enclosed industrial gear drives and bearings particularly where they are operated under heavy duty conditions such as heavy loading, slow speed, shock loads and in wide extremes of temperature. ENDURATEX Synthetic EP gear oils are suitable for wet brakes, helical, bevel and planetary gear units and geared motors for mobile and industrial applications.

The high inherent viscosity index of ENDURATEX Synthetic EP gear oils means they retain their viscosity at high operating temperatures. This often allows the use of a lower ISO grade than with conventional gear oils, resulting in even greater energy savings. ENDURATEX Synthetic EP gear oils run cooler while maintaining exceptional lubricant film strength. For gearboxes that operate outdoors, ENDURATEX Synthetic EP gear oils can operate at temperatures as low as -30°C (-22°F), providing excellent low temperature fluidity. The wide temperature performance of ENDURATEX Synthetic EP gear oils leads to their efficient operation over -30°C (-22°F) to 121°C (250°F) range.

ENDURATEX Synthetic EP gear oils meet and exceed the following OEM and industry standards:

- AGMA 9005-F16
- Chinese GB 5903 L-CKC/L-CKD
- Chinese GB/T 33540.3
- David Brown S1.53.101 Type E
- DIN 51517-3
- Fives Cincinnati EP Gear Oils
- ISO 12925-1 CKC, CKD, CKSMP
- Liebherr 12723896 Rev. 003
- Schaeffler Step 1-4
- SEW Eurodrive 070040513
- US Steel 224
- Wabtec / GE Diesel-Electric Locomotives Coupling D50E36A (ISO 460)
- Wabtec / GE Diesel-Electric Locomotives Gear Case D50E36B (ISO 150, Summer Weight)
- Wabtec / GE Off-Highway Vehicle Gearbox D50E35 (ISO 150-460)

ENDURATEX Synthetic EP gear oils are approved by major gear OEMs according to the specifications listed below:

- Flender GmbH (revision 16)
- ZF Witten ZFN-W-17-145 rev 4
- Sumitomo Drive Technologies (Hansen Industrial Technologies) BUI-TEC- 2009-4-001 H
- Renk 36011-11
- Eickhoff QSV19.0002

When converting a gearbox to ENDURATEX Synthetic EP, it is recommended to be cleaned and flushed first to gain the full benefit of the product. ENDURATEX Synthetic EP gear oils are compatible with mineral oils and polyalphaolefin lubricants.

TYPICAL PERFORMANCE DATA

Property	Test Method	ENDURATEX SYNTHETIC EP			
		150	220	320	460
Former AGMA Grade		4 EP	5 EP	6 EP	7 EP
Density, kg/L at 15°C	ASTM D4052	0.8414	0.8431	0.8453	0.8466
Color Index	ASTM D1500	0.1	0.1	0.1	0.1
Viscosity, cSt @ 40°C	D445	151.8	213.6	321.5	440.9
cSt @ 100°C		21.2	27.8	38.5	49.8
SUS @ 100°F		778	1096	1657	2280
SUS @ 210°F		101	133	184	239
Viscosity Index	ASTM D2270	164	167	171	175
Pour Point, °C / °F	ASTM D5950	-54 / -65	-51 / -60	-48 / -54	-45 / -49
Flash Point, COC, °C / °F	ASTM D92	222 / 432	222 / 432	232 / 450	232 / 450
Rust, Procedure A & B, 24 h	ASTM D665	Pass	Pass	Pass	Pass
Copper Corrosion, 3h @ 100°C	ASTM D130	1B	1B	1B	1B
TAN, mgKOH/g	ASTM D664	0.3	0.3	0.3	0.3
Foam properties	ASTM D892				
Seq. I, mL		0/0	0/0	0/0	0/0
Seq. II, mL		5/0	10/0	10/0	5/0
Seq. III, mL		5/0	5/0	5/0	0/0
Timken OK Load, lb	ASTM D2782	>90	>90	>90	>90
Four Ball EP weld, kg	ASTM D2783	250	250	250	250
FZG A/8.3/90, Failure Load Stage	DIN ISO 14635-1	>14	>14	>14	>14
FZG A/16.6/90, Failure Load Stage	DIN ISO 14635-1	>14	>14	>14	>14
FZG A/16.6/140, Failure Load Stage	DIN ISO 14635-1	>14	>14	>14	>14
FZG Micropitting, 90°C, Failure Load Stage, GFT-Class	FVA 54/7	10, High	10, High	10, High	10, High
FE8 Roller Bearing, D-7,5/80-80, Roller Wear, mg	DIN 51819-3	1	1	1	1
FE8 Roller Bearing, D-7,5/100-80, Roller Wear, mg	DIN 51819-3	5 (Excellent)	5 (Excellent)	5 (Excellent)	5 (Excellent)

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

Learn more about us: petrocanadalubricants.com
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Committed to the disciplined operation of our business.



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