



DURATRAN™ SYNTHETIC

Introduction

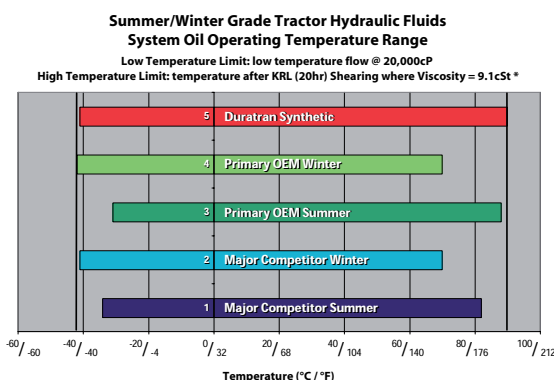
Petro-Canada DURATRAN Synthetic is a full synthetic heavy duty transmission/hydraulic fluid designed for farm tractors, agricultural machinery, off-highway mining, forestry and construction equipment, with a common oil system for transmission, differential, final drives, hydraulics, wet brake and power steering mechanisms. **Petro-Canada's DURATRAN™ Synthetic THF was awarded the OEMmie Product Innovation Award in 2003. The award recognizes products that advance the state-of-the-art, provide unique solutions for the off highway industry and/or increase equipment performance.** DURATRAN Synthetic is formulated with 99.9% pure crystal clear HT processed base oils in combination with an advanced additive package eliminating the need for seasonal fluid changes to accommodate cold or hot temperature extremes. This formulation offers exceptional performance surpassing equipment manufacturer's specifications.

Features and Benefits

- **Superior Wear Protection**
 - Minimizes and reduces wear on transmission, differential, and final drive gears at elevated temperatures reducing the need for replacement parts
 - Superior gear and bearing wear protection even in the presence of water contamination
 - Less internal component wear reduces maintenance costs allowing increase in operating up time and reliability

- **Exceptional Performance at High and Low Temperatures**

- Surpasses John Deere OEM viscosity specifications JDM J20C (summer) and JDM J20D (winter)
- Reliable hot and cold weather operation providing a wide operating temperature range of -41°C/-42°F to 90°C/194°F. Operating temperature ranges are based on low temperature pumpability @ 20,000 cP and High Temperature Viscosity Film Thickness @ 9.1 cSt after KRL (20 hr) shearing



Minimum viscosity is 9.1cSt @ 100°C. The after-shear temperature at 9.1cSt shows the stability of the fluid (higher is better).

- **Superior Frictional Properties**

- Exceptional frictional performance offering less brake chatter, and effective braking to avoid slip-skip problems
- Allows superior clutch & transmission performance for smoother equipment operation

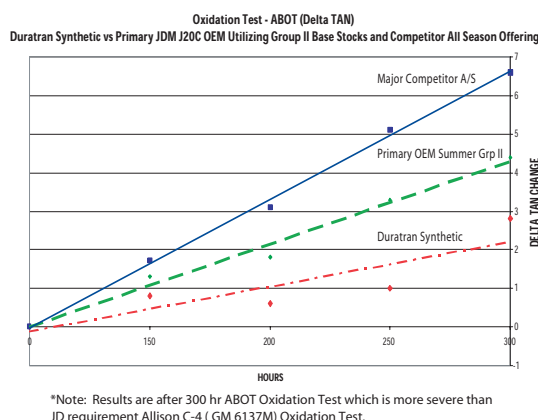
What is the HT difference?

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.



• Long Life Protection

- Superior resistance to high temperature fluid break down
- Superior oxidation stability resulting in resistance to viscosity increase and acid formation at elevated temperatures
- Superior resistance to build up of sludge and varnish on transmission & hydraulic components for extended drain intervals
- Surpasses the Allison C-4 oxidation test as well as the more demanding ABOT Mercon V oxidation test



Applications

Petro-Canada DURATRAN Synthetic is recommended for use in farm tractors, agricultural machinery, off highway mining, forestry and construction equipment that has a common oil system for the transmission, final drive, hydraulic, power take off, wet brake and power steering mechanisms. In addition, DURATRAN Synthetic is suitable for use in transmissions specifying an Allison C-4, Caterpillar TO-2 and Caterpillar Axle oil L180D.

DURATRAN Synthetic formulation surpasses the field performance requirements of a wide range of equipment manufacturers including major North American tractor manufacturers.

DURATRAN Synthetic offers the trouble free operation that should be expected from a synthetic formulation in the widest range of climate & temperature extremes.

DURATRAN Synthetic lubricates and protects bearings and gears, transmits hydraulic power and provides the correct frictional and heat transfer medium for trouble free wet brake, clutch and transmission performance.

Petro-Canada recommends DURATRAN Synthetic for use where the following farm tractor, transmission, differential, and hydraulic fluid types are called for:

Farm Tractor Fluids

MANUFACTURER	CURRENT SPECIFICATION	MEETS OLDER SPECIFICATIONS
JOHN DEERE	JDM J20C (Summer) JDM J20D (Winter)	JDM J20A/B, JDM J14B/C JD 303 Fluid
MASSEY-FERGUSON	M-1135, M-1141, M-1143, M-1145* *Note: For UTTO applications only. Do not use in STOU applications.	M-1129-A, M-1127-A/B, M-1110
CNH (CASE I.H., J.I. CASE NEW HOLLAND GROUP)	MS-1209/MAT 3505, MS-1210/JIC145/ MAT 3506, MS-1230/CNH MAT 3509, ESN-M2C134-D/MAT 3525	MS-1207, MS-1206, MS-1205, MS-1204/JIC-185, B-6, B-5, JIC-144, JIC-143, FNHA-2-C-201.00, FNHA-2-C-201.00A (134-D), FNHA-2-C-200.00 ESN-M2C134-A/B/C, ESN-M2C86-B/C ESN-M2C53-A, ESN-M2C48-B
KUBOTA	Kubota UDT Fluid	—
WHITE FARM (OLIVER)	Q-1826, Hydraulic Transmission Fluid (HTF)	Q-1802, Q-1766B, Q-1722, Q-1705
AGCO Deutz ALLIS ALLIS	Power Fluid 821XL 272843	257541 246634
STEIGER	Hydraulic/Transmission Fluid, SEMS 17001	—
VERSATILE	ESN-M2C134-D	Hydraulic/Gear Fluid Spec 24M Spec 23M
LANDINI	Tractor II Hydraulic Fluid	—
HESSTON FIAT	Olio fiat Tutela Multi-F	AF-87
VOLVO	WB 101	—
ZF TRANSMISSIONS	TE-ML, 03E, -05F, -21F (axles)	—

Transmissions, Differentials and Hydraulics

MANUFACTURER	CURRENT SPECIFICATION	MEETS OLDER SPECIFICATIONS
SUNDSTRAND	Hydrostatic Transmission Fluid	—
ALLISON	Type C-4 Fluid	C-3 Fluid
CATERPILLAR	—	TO-2
DRESSER CONSTRUCTION EQUIPMENT DIVISION	Transmission/Hydraulic Fluid	
PARKER/ABEX/DENISON	Hydraulic Fluid-HF-0/1/2	
EATON/VICKERS	M-2950-S, 1-286-S	—
PLESSEY-SUNDSTRAND	Hydraulic Fluid	—
CLARK	Lift Truck Transmission Fluid TA12, TA18	HR 500, HR 600

Typical Performance Data

PROPERTY	TEST METHOD	DURATRAN SYNTHETIC
Flash Point, COC, °C / °F	ASTM D92	225 / 437
Kinematic Viscosity cSt @ 40°C / SUS @ 100°F cSt @ 100°C / SUS @ 210°F	ASTM D445	46.80 / 235 10.0 / 59.6
High Temp / High Shear Viscosity cP @ 150°C / 302°F	ASTM D4682	3.17
Viscosity Index	ASTM D2270	208
Brookfield Viscosity, cP @ -20°C / -4°F	ASTM D2983	1260
Brookfield Viscosity, cP @ -40°C / -40°F	ASTM D2983	15,740
Scanning Brookfield Viscosity, cP @ -40°C / -40°F	ASTM D5133	27,000
Pour Point, °C / °F	ASTM D5950	-47/-53
Vickers Pump Wear	ASTM D2882	Pass
Total Base Number (TBN)	ASTM D2896	10.0
Copper Corrosion, 3 h, 149°C / 300°F	ASTM D130M	1B
KRL Shear Testing, 20hr Viscosity cSt @ 100°C / 212°F After KRL Testing	CEC-L-45-T-93 ASTM D455	7.34
ABOT Oxidation Testing, (155°C / 311°F) 300 hrs. Tan Increase	Ford Mercon V ASTM D664	2.80
John Deere Tests		
Shear Stability Test; sheared oil cSt 100°C / 212°F	JDQ 102	7.60
Rust Test - Humidity Cabinet; (49°C / 120°F), 100% R.H.	JDMJ20C	Pass
Oxidation Stability Test	JDQ 23	Pass
Oil Compatibility Test	JDQ23	Pass
Compatibility Sensitivity Test	JDQ19	Pass
Foam Test	JDQ33	Pass

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

Health and Safety

To obtain Material Safety Data Sheet (MSDS), 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
Europe Phone +1-416-730-2389
Asia Phone +1-416-730-2372
China Phone +86 (21) 6362-0066

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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