

DURATRAN™ AND DURATRAN XL SYNTHETIC BLEND TRACTOR HYDRAULIC FLUIDS (THF) UNIVERSAL TRACTOR TRANSMISSION OILS (UTTO)

Introduction

Petro-Canada Lubricants DURATRAN™ and DURATRAN XL Synthetic Blend are premium heavy duty multifunctional tractor hydraulic fluids (THF) or sometimes referred to Universal Tractor Transmission Oils (UTTO) are designed for agriculture, mining, forestry and construction equipment with a common oil reservoir for transmission, differential, final drive, hydraulic system, power take-off, wet brake and power steering mechanisms.

The DURATRAN product line is formulated with the 99.9% pure crystal clear HT processed base oils in combination with minimal viscosity index improver and a leading edge additive package. This formulation offers exceptional performance surpassing equipment manufacturer's specifications and requirements.

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 in the presence of water contamination
 - Less internal component wear reduces maintenance costs allowing increased operating up time and reliability
 - Extended service intervals, reducing the need for seasonal change-outs (**DURATRAN XL Synthetic Blend**)
- **Excellent Fluidity at Low Temperatures**
 - Smoother cold weather operation down to temperatures below -40°C (-40°F) (**DURATRAN XL Synthetic Blend**) or temperatures below -35°C (-31°F) (**DURATRAN**)
 - Extra protection for lubricated components during cold weather operation

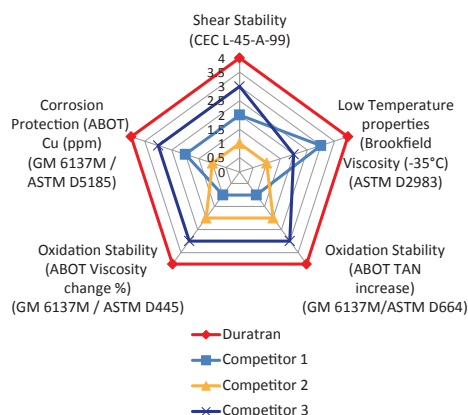
- **Superior Frictional Properties**
 - Exceptional frictional performance offering less brake chatter, and effective braking to avoid slip-skip problems
 - Allows superior clutch and transmission performance for smoother equipment operations
- **Long Life Protection**
 - Superior resistance to high 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 and hydraulic components for extended drain intervals
 - Surpasses the Allison C-4 (obsolete) oxidation test as well as the more demanding ABOT oxidation test used in Automatic Transmission Fluid validations

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.



Performance chart for DURATRAN in comparison to Competing THFs



Applications

Petro-Canada DURATRAN™ and DURATRAN XL Synthetic Blend are recommended for use in agriculture, mining, forestry and construction equipment that use a common oil reservoir for the transmission, final drive, hydraulic system, power take-off, wet brake and power steering mechanisms.

In this new age of efficiency, farm tractor OEM's such as AGCO, CNH and John Deere are designing new hardware such as farm tractor (FT) continuously/infininitely variable transmission (CVT/IVT). Note that these CVT/IVT transmissions are different than the passenger car CVT designs in the field today.

AGCO group implemented a FT CVT designed by Fendt and the same design in Massey, Valtra, and Challenger tractors recommends their M1145 fluid as service fill for these transmissions.

Case New Holland offer a FT CVT. They recommend latest specification MAT 3540 type fluid. In some CNH owners manuals if the owner does not have access to MAT 3540 they can use MAT 3525 fluid.

John Deere also offer a FT CVT designed by ZF (John Deere markets it as an IVT). The fluid recommended must meet the latest specification JDM 20C.

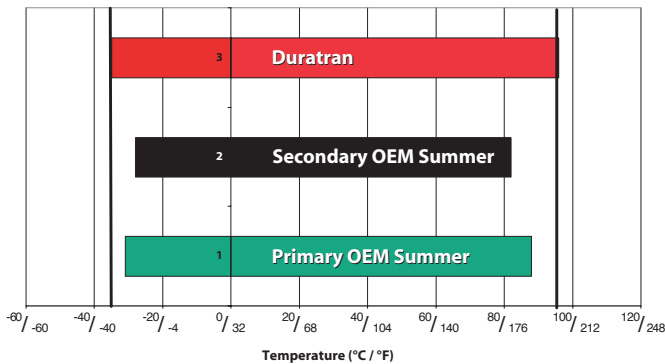
Check with the OEM as to the correct fluid specification required to lubricate FT CVT/IVT systems.

DURATRAN is best suited for agriculture applications where various OEM farm equipment and/or extreme summer climate operating conditions are present.

DURATRAN XL Synthetic Blend is best suited for mining, forestry, construction and farming applications where equipment is operated in both hot and cold temperatures. One product for extended seasons.

Summer Grade Tractor Hydraulic Fluids System Oil Operating Temperature Range

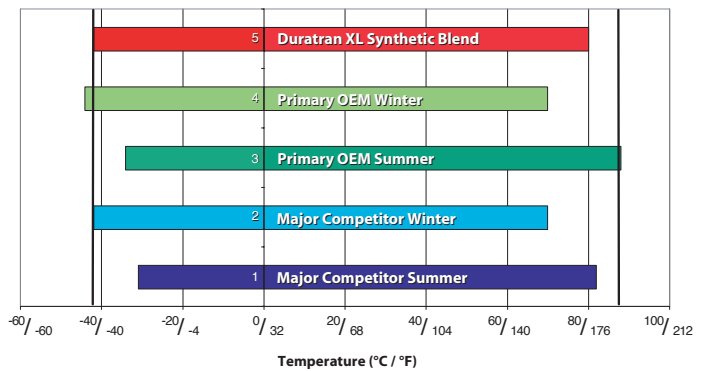
Low Temperature Limit: Brookfield Viscosity ASTM D2983 at 20,000 CP
High Temperature Limit: CEC L-45-A-99. Shearing where Viscosity = 9.1cSt *



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

Summer/Winter Grade Tractor Hydraulic Fluids System Oil Operating Temperature Range

Low Temperature Limit: Brookfield Viscosity ASTM D2983 at 20,000 CP
High Temperature Limit: CEC L-45-A-99. Shearing where Viscosity = 9.1cSt *



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

DURATRAN are recommended for use in AGCO, Massey Valtra, Challenger tractors, as well as Case New Holland tractors and John Deere tractors.

DURATRAN and DURATRAN XL Synthetic Blend are recommended for use where the following farm tractor fluid types are specified:

Farm Tractor Fluids

MANUFACTURER	CURRENT SPECIFICATION	MEETS OLDER SPECIFICATIONS (Obsolete)
JOHN DEERE	JDM J20C (DURATRAN) JDM J20D (DURATRAN XL)	JDM J20A, JDM J14B, JD 303 Fluid (DURATRAN) JDM J20B, JDM J14C, JD 303 Fluid (DURATRAN XL)
MASSEY-FERGUSON	M-1135, M-1141, M-1143 M-1145* (DURATRAN only) *Note: For UTTO applications only. Do not use in STOU engine 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/JIC-145/ 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 (DURATRAN) FNHA-2-C-200.00 (DURATRAN XL) ESN-M2C134-A/B/C, ESN-M2C86-B/C, ESN-M2C53-A, ESN-M2C48-B
GIMA	MF CMS 1141 MF CMS 1145 (DURATRAN)	—
KUBOTA	Kubota UDT Fluid (DURATRAN) Kubota UDT ₂ (DURATRAN XL)	—
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 1701	—
VERSATILE	ESN-M2C134-D	Hydraulic/Gear Fluid Spec 24M, Spec 23M
VALTRA /VALMET	—	G 2-08 (Duratran) and G2-98 (DURATRAN)
LANDINI	Tractor II Hydraulic Fluid	—
HESSTON FIAT	Oliofiat Tutela Multi-F	AF-87
VOLVO	Std 1273,03 -97303 WB 101 DURATRAN (Approved)	ESN-M2C 134-D
KOMATSU	KES 07.866 (DURATRAN)	—
ZF TRANSMISSIONS	TE-ML, -03E; -05F; -06K; -21F (axles) (DURATRAN)	—

Transmissions, Differentials and Hydraulics

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

Typical Performance Data

PROPERTY	TEST METHOD	DURATRAN™	DURATRAN XL
Flash Point, COC, °C/°F	ASTM D92	241/466	219/426
Kinematic Viscosity cSt @ 40°C/SUS @ 100 °F cSt @ 100°C/SUS @ 210 °F	ASTM D445 CEC-L-45-T-93	55.1/281 9.4/58.0	46.9/239 8.3/54.0
High Temp / High Shear Viscosity cP @ 150°C/302°F	ASTM D4682	2.94	2.5
Viscosity Index	ASTM D2270	153	152
Brookfield Viscosity cP @ -20°C/-4°F cP @ -35°C/-31°F cP @ -40°C/-40°F	ASTM D2983	2,670 17,300 61,200	1,120 — 13,750
Pour Point, °C/°F	ASTM D5950	-45/-49	-51/-60
Vickers Pump Wear	ASTM D2882	Pass	Pass
Total Base Number (TBN)	ASTM D2896	10.2	10.3
KRL Shear Testing after 20 Hr, viscosity cSt @ 100°C/212°F	CEC-L-45-T-99	8.0	5.9
John Deere Tests			
Shear Stability Test	JDQ 102	8.45	6.9
Rust Test – Humidity Cabinet (49°C/120°F), 100% R.H.	JDM J20C	Pass	Pass
Oxidation Stability Test	JDQ 23	Pass	Pass
Oil Compatibility Test	JDQ 23	Pass	Pass
Compatibility Sensitivity Test	JDQ 19	Pass	Pass
Foam Test	JDQ 33	Pass	Pass

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

Note: Many Tractor OEM's have since been consolidated to one Brand. Specifications have been noted to be the last known specification published for specific Tractor brand names.

Check with your OEM supplier for the latest lubricant specification required for your equipment or your OEM Manual

Note: For UTTO applications only. Do not use in engine application where Super Tractor Oil Universal (STOU) are recommended

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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