

# **TECH DATA**

## **PRODURO™ TO-4+ UHP**

### **TRANSMISSION/DRIVE TRAIN OIL**

#### **(TDTO)**

## **INTRODUCTION**

PRODURO™ TO-4+ UHP is an ultra high performance, premium multi-grade all season product with significant improvement in High Temperature High Shear (HTHS) and in-service viscosity\*. It is designed to maximize durability and equipment protection at elevated system temperatures and in severe winter and summer conditions. Seasonal change-outs for hydraulics, wet brakes, drive trains and transmissions can be eliminated without compromising the lubricant performance with PRODURO TO-4+ UHP.

This product is focused on applications where equipment is operating at higher temperatures and where higher after-shear (in service) viscosity is needed. Additionally, component wear attributable to both cold start-up conditions and high operating temperatures can be reduced.

PRODURO TO-4+ UHP is viscometrically equivalent to an SAE 10W-40. It offers multi-grade performance with excellent shear stability, standing up to the toughest operating conditions for mobile equipment. It is formulated with ultra-pure, synthetic base oils combined with high performance additives to deliver outstanding equipment protection and longer oil life. Drain intervals can be extended to reduce total maintenance costs\*\*. Equipment life may be increased up to 6% and higher which translates to cost savings\*\*\*.

## **FEATURES AND BENEFITS**

**The following demonstrates how PRODURO TO-4+ UHP can help increase productivity and decrease operating costs:**

- High viscosity index ensures consistent performance over a wide temperature range
- Extended component life through increased film thickness
- Improved after shear (in service viscosity) protecting the equipment at elevated temperatures
- Better cold start-up protection and reduced wear
- Better protection of wet brakes and hydraulic components at elevated operating temperatures versus TO-4 10W oils
- Year-round use provides increased efficiencies
- May eliminate seasonal oil changes
- Extends oil drains
- May allow for product consolidation which results in reduced handling costs
- Less downtime and better performance during all four seasons
- Premium additive package ensures peak performance
- Carefully balanced lubricity and frictional properties optimize the operation of powershift clutches and wet brakes, eliminating brake chatter and clutch wear
- Minimal deposit build-up on clutch and transmission components
- Outstanding anti-wear protection for hydraulic pumps and transmission systems versus TO-4 10W oils
- Extremely high after shear VI for increased pump efficiency in outdoor applications
- Lower energy consumption for same amount of work or increased equipment productivity

Petro-Canada Lubricants specialty fluids, lubricants and greases have an advantage in quality and performance. That's because our formulas are created and reviewed by an expert team of Research & Development specialists who ensure our finished products deliver to the specifications we demand and the performance standards our customers need.

\* versus PRODURO TO-4+ Synthetic All Season.

\*\* extending oil drains should always be taken in conjunction with a comprehensive oil analysis program.

\*\*\* depending on the operating conditions, equipment type, ground structure etc, the trial even showed up to 10% increase in some equipment life.

## APPLICATIONS

PRODURO™ TO-4+ UHP is a multi purpose transmission, final drive, hydraulic and wet brake fluid for heavy duty mobile equipment, which meets the friction requirements of the Caterpillar TO-4 specification.

PRODURO TO-4+ UHP is suitable for Caterpillar TO-4, Allison C-4 fluid requirements (obsolete), API Gear Lubricant Service GL-3 for manual transmissions and spiral bevel gears (inactive), API Category CD (obsolete) for diesel engine oils, Komatsu's KES 07.868.1, ZF transmission oil specification TE-ML 03C and KOMATSU micro-clutch usage.

PRODURO TO-4+ UHP is recommended for the following Caterpillar or Komatsu vehicle systems:

- Powershift and Hydrostatic Transmissions
- Wet Brake Mechanisms
- Differentials and Final Drives
- Hydraulics

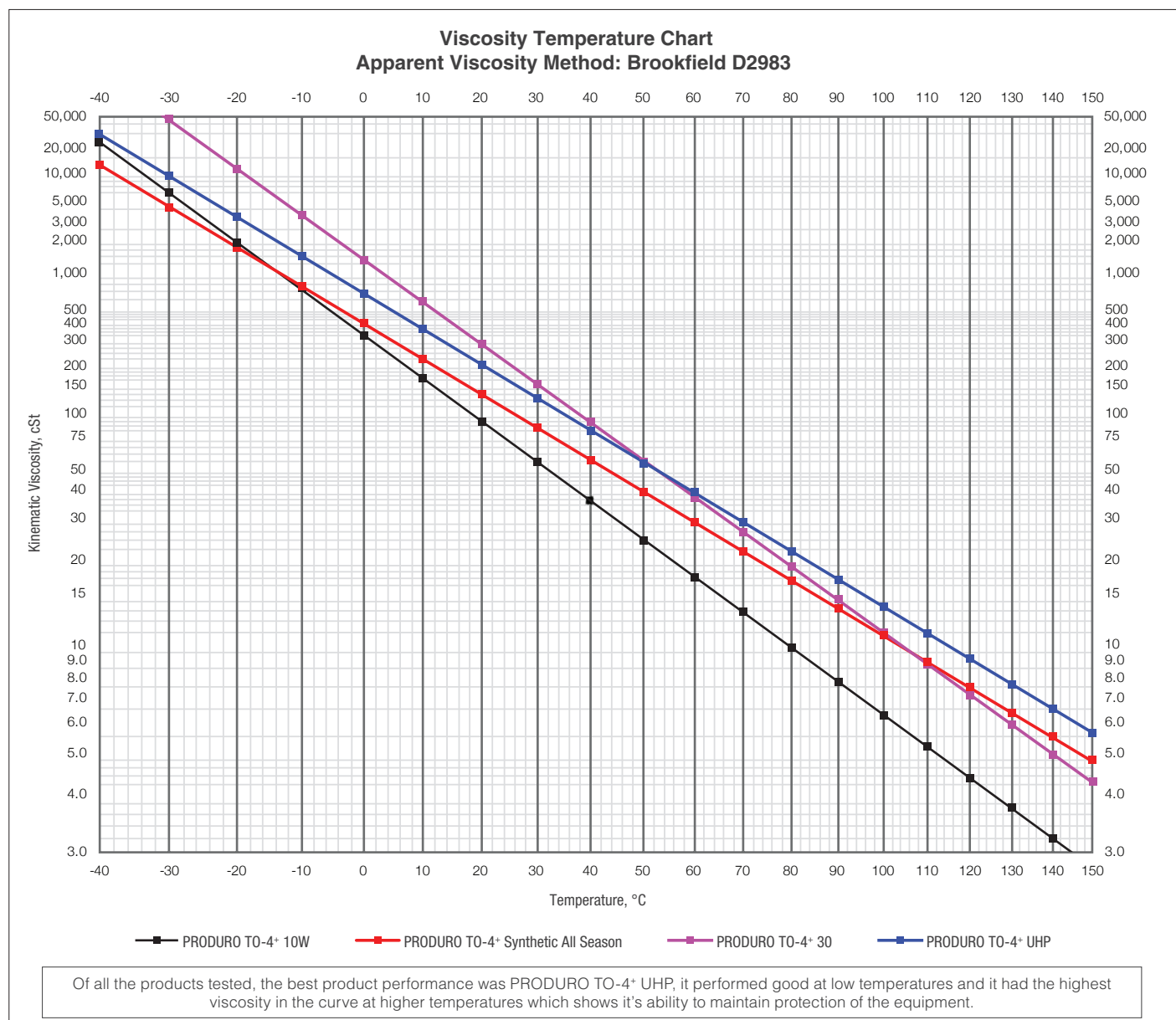
Although PRODURO TO-4+ UHP is designed as an SAE 10W-40 grade, this fluid has excellent low temperature properties and meets pumpability requirement of an SAE 5W grade.

For components requiring a Caterpillar FD-1 oil, we recommend the PRODURO FD-1 product line.

Consult the latest OEM equipment manuals for applicable applications.

## VISCOSITY-TEMPERATURE RELATIONSHIP

Over a wide temperature range, the viscosity-temperature relationship demonstrates the advanced capability of the PRODURO TO-4+ UHP at both very low and high temperatures versus SAE 10W and SAE 30 grades.



## TYPICAL PERFORMANCE DATA

Property	Test Method	PRODURO TO-4+ UHP
Density, kg/L at 15°C	D4052	0.87
Flash Point, COC, °C (°F)	D92	215 (419)
Viscosity, cSt @ 40°C (SUS @ 100°F) cSt @ 100°C (SUS @ 210°F)	D445	80.2 (407.4) 13.5 (73.3)
Viscosity Index	D2270	169
Brookfield Viscosity, cP @ °C (°F)	D2983	26,250 @ -35 (-31)
Cold Cranking Viscosity, cP @ °C (°F)	D5293	5,976 @ -25 (-13)
Borderline Pumping Viscosity cP @ °C (°F)	D4684	26,748 @ -35 (-31)
Pour Point, °C (°F)	D5950	-45 (-49)
Zinc, % wt	D4951	0.13
Calcium, % wt	D4951	0.31
Phosphorus, % wt	D4951	0.11
Sulfated Ash, mass%	D874	1.13
Foaming 1 2 3	D892	0/0 25/0 0/0
Base No. (BN), mg KOH/g	D2896	8.60

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

Learn more about us: [lubricants.petro-canada.com](https://lubricants.petro-canada.com)  
Contact us: [lubecsr@hfsinclair.com](mailto:lubecsr@hfsinclair.com)

Committed to the disciplined operation of our business.



**Petro-Canada Lubricants Inc.**  
2310 Lakeshore Road W. Mississauga, Ontario, Canada L5J 1K2  
[lubricants.petro-canada.com](https://lubricants.petro-canada.com)

Trademarks are owned or used under license.  
IM-8219E (2023.03)