



A HOLLYFRONTIER BUSINESS

# TECH DATA

## TRAXON™ SYNTHETIC

### GEAR OILS

## INTRODUCTION

TRAXON Synthetic 75W-90 and 75W-85 are premium multi-grade gear oils formulated to provide excellent long-lasting wear protection to extend equipment life and reduce downtime and maintenance costs. TRAXON Synthetic provides excellent year-round performance, and is particularly suited for extreme cold temperatures, for excellent lubrication of gear drives found in manual transmissions and rear axles.

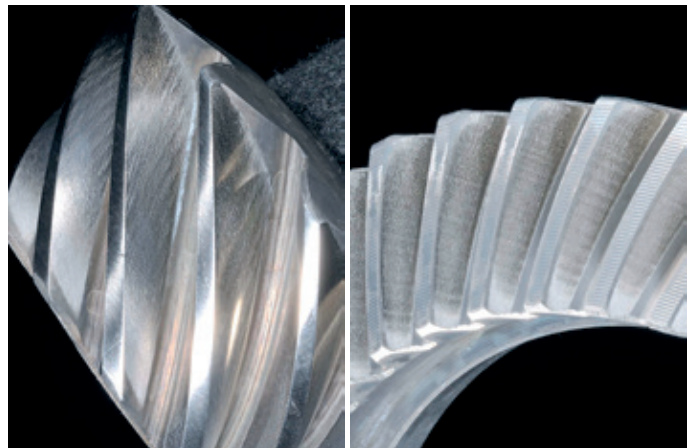
TRAXON Synthetic starts with the HT Purity Process to produce a 99.9% pure, crystal clear base oil. By removing the impurities that can hinder the performance of competitive conventional oils, and blending in specialty additives, TRAXON Synthetic gear oils delivers maximum performance.

## FEATURES AND BENEFITS

### EXCELLENT WEAR PROTECTION

**Outstanding shear stability and anti-wear EP additives protect equipment being driven longer, harder and faster in tougher conditions for extended equipment life and reduced maintenance costs**

- Shear stability ensures retention of viscosity which protects equipment components against metal-to-metal contact and wear, especially at high temperatures
- Outstanding Anti-wear and EP Protection



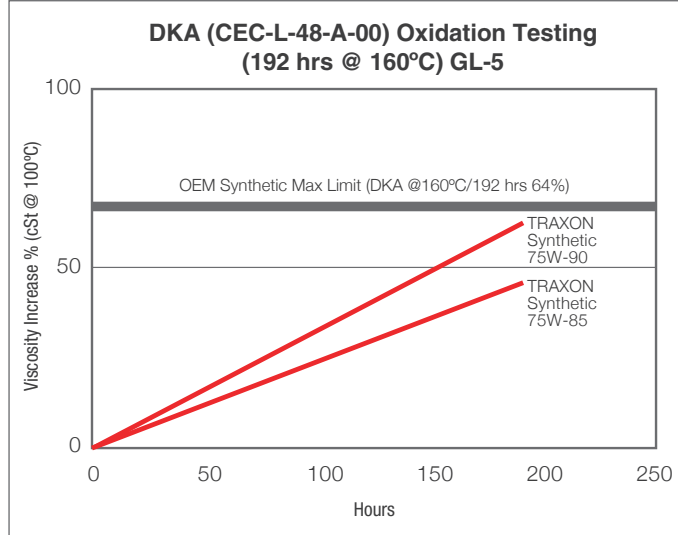
As part of the SAE J2360 requirement, specialized gear rig testing is required to ensure robust gear protection in the field. The L-42 test (ASTM D7452) is a gear test that assesses the gear oils' ability to protect under high speed and high shock loading conditions. TRAXON Synthetic 75W-85, even though an SAE 85 grade gear oil, has outstanding gear protection as see in the pictures above. The gear set (both pinion and ring side) after the test still looked like new.

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.



## LONGER LIFE

Meets European and major North American OEM's full synthetic requirements as measured by the DKA Oxidation test. The better an oil can maintain its viscosity and resist degradation, the longer it will last. This translates into helping to reduce maintenance costs and increase uptime.



In the DKA oxidation test, product performance is measured by how much harmful viscosity increase will occur over time. TRAXON Synthetic 75W-90 meets the OEM full synthetic requirements by remaining below the maximum limit for the entire duration of the test.

Both TRAXON Synthetic 75W-90 and 75W-85:

- Extend intervals between changeouts up to 400,000 km (250,000 miles)\* for maximized oil life
- Minimize sludge, varnish or hard carbon deposits for better protection against wear

## IMPROVED EFFICIENCY

Efficiency is important in today's powertrains. Several characteristics impact efficiency, including operating temperature, load and rotation speeds involved.

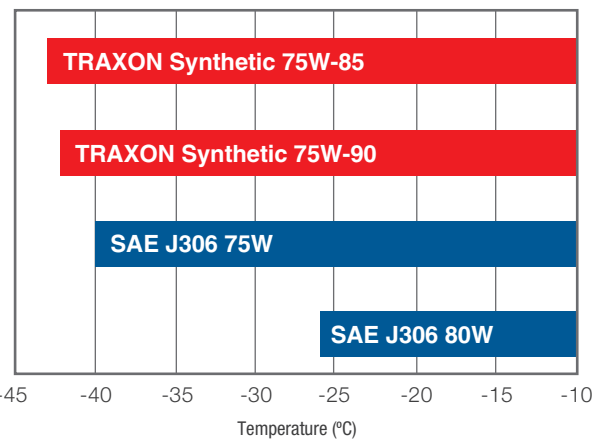
- TRAXON Synthetic 75W-90 provides better torque efficiency in all operating conditions of speed and load vs. SAE 80W-90 GL-5 oils (for 20°C to 45°C at moderate loads) as proven by FZG torque efficiency testing. This demonstrates that SAE 75W oils give lower viscous drag at cooler temperatures compared to SAE 80W during the warm up phase of the axle. This is especially important in frequent start-stop applications even where the axle lubricants may not reach a very high operating temperature.

**Synthetic 75W-90 and 75W-85 % Torque efficiency versus 80W-90 at a static operating temperature of 79.4°C/176°F**



The above chart shows that TRAXON Synthetic 75W-85 is up to 1.69% more efficient than an SAE 80W-90 and TRAXON Synthetic 75W-90 is up to 1.03% more efficient than an SAE 80W-90\*\* when axles operate at low speed and load. They gain the most from TRAXON Synthetic 75W-85, but there are still tangible benefits in high speed and load conditions using either TRAXON Synthetic 75W-90 or 75W-85 grades versus an SAE 80W-90.

**TRAXON (Low Temperature Performance) SAE J306 (°C) @ 150,000 cP**



TRAXON Synthetic 75W-90 and 75W-85 protect equipment better in extreme cold temperatures than regular 80W oils and exceed the 75W specification.

## Low Temperature Protection

**Exceptional temperature protection for extreme cold weather conditions**

- Even easier start-ups and cold weather shifting
- Better gear protection at extreme cold temperatures

\*Based on highway, normal operation which must be reduced for severe service, vocational and/or off-road type applications.

\*\* Southwest Research Institute® (SwRI®) paper entitled "DEVELOPMENT OF AN ARMY STATIONARY AXLE EFFICIENCY TEST STAND - PART II" for the U.S. Army TARDEC, January 2017

## INDUSTRY & OEM APPROVALS

TRAXON Synthetic 75W-90 and 75W-85 are approved against the SAE J2360 Global Standard (formerly MIL-PRF-2105E) (PRI GL 0841 and PRI GL 1013 respectively). This means customers around the world can be assured of a measurable and recognized quality of performance for their lubricants.

TRAXON Synthetic 75W-90 and 75W-85 are designed to meet API Gear Lubricant Service GL-5 and API MT-1 Gear Lubricant standard for heavy duty axle / hypoid gear and manual transmissions (respectively).

TRAXON Synthetic 75W-90 is approved by Mack where a GO-J gear oil is specified, listed by ZF as TE-ML lubricant class 05A, 16B, 17B and 21A approved (ZF002212), approved against MAN 342 Typ M1 and M2 and approved for the Meritor 0-76-E specification. TRAXON Synthetic 75W-90 also meets Scania STO 1:0 requirements for axles and manual transmissions and is suitable for use where the John Deere J11E and J11G, Ford M2C 200B and 201A, CNH 3511 and Volvo 1273,10 (97310) or 1273,12 (97312) specifications are required.

TRAXON Synthetic 75W-85 is suitable for use where Mack GO-J, John Deere J11E and J11G, Volvo 1273,10 (97310) or 1273,12 (97312), and Meritor 0-76-J specifications are required.

## APPLICATIONS

TRAXON Synthetic 75W-90 and 75W-85 are recommended for year-round use and for extreme cold temperature conditions in many manual transmissions, differentials, power take off units and final drives found on passenger cars, trucks, and off-highway vehicles used in construction, farm, forestry and mining operations. Consult owners manual for type and SAE grade needed.

TRAXON Synthetic 75W-90 and 75W-85 are recommended for most oil lubricated universal joints, wheel bearings, planetary gear sets, steering gears and certain industrial gear reducers requiring API GL-3, GL-4, or GL-5 oils.

Due to specific lubrication requirements TRAXON Synthetic must not be used in:

- Automatic transmissions
- Powershift transmissions
- Hydrostatic drives and systems that include the lubrication of wet clutches and brakes
- Manual transaxles on front wheel drive vehicles where an automatic transmission fluid or engine oil is specified
- Spicer manual transmissions where single grade engine oils are specified
- Not for use in specific manual transmissions where you must use an API GL-4 rated oil only and a GL-5/MT-1 oil is not acceptable

## TYPICAL PERFORMANCE DATA

Property	Test Method	TRAXON SYNTHETIC 75W-90	TRAXON SYNTHETIC 75W-85
Density, kg/L, 15°C (60°F)	ASTM D4052	0.858	0.856
Flash Point, COC, °C (°F)	ASTM D92	202 (396)	193 (379)
Kinematic Viscosity, cSt @ 40°C (SUS @ 100°F) cSt @ 100°C (SUS @ 210°F)	ASTM D445	96.7 (492) 15.5 (81)	77.7 (397) 12.3 (69)
Brookfield Viscosity, cP @ -40°C (-40°F)	ASTM D2983	89,700	69,000
*Temperature for 150,000 cP, °C (°F)	ASTM D2983	-43 (-45)	-43 (-45)
Viscosity Index	ASTM D2270	171	156
Pour Point, °C (°F)	ASTM D5950	-48 (-53)	-45 (-54)
Copper Corrosion, 3 h @ 121°C/250°F	ASTM D130M	1b	1b
Foaming Sequence 1	ASTM D892	0/0	10/0
Sequence 2		10/0	25/0
Sequence 3		0/0	10/0
Phosphorus, % wt	ASTM D4951	0.125	0.123
Boron, % wt	ASTM D4951	0.028	0.030

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

\*The figure of 150,000 cP maximum Brookfield viscosity is issued in US MIL-PRF-2105E and SAE J2360 to define low temperature properties. This value was selected as the result of a series of tests in a specific rear axle design which showed that pinion bearing failure can occur at viscosities higher than 150,000 cP. This technique defines the minimum temperature at which each viscosity grade can be safely used.

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Committed to the disciplined operation of our business.



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