



# STAR TRANS 80W-110



*Very high performance lubricant especially developed for the lubrication of materials used in public works, minings or quarries.*

## PERFORMANCE LEVELS

### API GL-5/GL-4

### CAT FD-1

### CAT TO-4

Its "Extreme-Pression" reinforced properties (API GL-5) give it excellent fatigue and wear resistances, especially for gears under load, shocks and high temperatures.

Its modified base oils provide better temperature resistance than mineral ones.

Meet the main requirements of the final drive specification :

- ✓ CATERPILLAR FD-1 (SAE 50)

TOTAL STAR TRANS 80W-110 has succeed the official tests of wet brake frictions according to :

- ✓ CATERPILLAR TO-4 (SAE 50)
- ✓ KOMATSU Micro Clutch

Its friction characteristics are also adapted for use in axles equipped with limited slip self-locking disc differentials (LIEBHEER, JCB, TEREX...) contact our technical services.

## APPLICATIONS

TOTAL STAR TRANS 80W-110 makes it possible to lubricate front or back strongly hypoid axles and loaded final reductions.

TOTAL STAR TRANS 80W-110 is usable in limited slip self-locking disc differentials.

TOTAL STAR TRANS 80W-110 permits also the cooling and the good work without vibrations of oil immersed brake systems.

TOTAL STAR TRANS 80W-110 can also be used in all types of gearboxes, with mechanical or synchronized shifting

TOTAL STAR TRANS 80W-110 is used all year round, due to its high viscosity index:

- Very fluid at cold temperature permits a use of the final drive line, without power losses and with a break capacity immediately available and efficient.
- Thick at high temperature, keeps an optimal and securized lubrication of loaded organs.

In certain application cases, TOTAL STAR TRANS 80W-110 must be used in conjunction with the so-called "STAR XL" additive (Refer to the Technical Data Sheet)

## PERFORMANCES AND CUSTOMER BENEFITS

- Allows to strongly decrease the lubricant number needed for the whole vehicle park maintenance.
- Reaches the performance levels required by the machinery OEMs for the severe earth-moving applications.
- Erases all mistake possibilities of lubricant application, with security.

## PHYSICAL AND CHEMICAL CHARACTERISTICS\*

TOTAL STAR TRANS 80W-110		Method	Value
Kinematic Viscosity at 40°C	mm <sup>2</sup> /s	ASTM D445	182
Kinematic Viscosity at 100°C	mm <sup>2</sup> /s	ASTM D445	18.6
Viscosity Index	-	ASTM D2270	115
Pour Point	°C	ASTM D97	-33
Phosphorous minimum value	ppm		2000

\* The features mentioned above are average values obtained with some variability in production and do not constitute a specification.

### TOTAL LUBRIFIANTS

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### TOTAL STAR TRANS 80W-110

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[www.lubricants.total.com](http://www.lubricants.total.com)



This lubricant does not cause adverse health effects when used in the intended application.

A safety datasheet is accessible on request from your local dealer or on the website [www.quickfds.com](http://www.quickfds.com)