



# TP STAR MAX FE 10W30



Very high performance lubricant specially developed for the lubrication of materials used in Public Works, Mines or Quarries. It provides substantial economies within the fuel consumption reduction. TP STAR MAX FE 10W-30, together with TP STAR TRANS 80W-110, form the "TP STAR CONCEPT".

## USES

### 1 Engines

### 2 Hydraulics systems

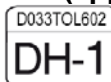
### 3 Manuel or powershift gearboxes

All Seasons  
From -15°C to +35°C

- TP STAR MAX FE lubricates the Diesel engines of the last generation, notably the depolluted engines according to the TIER 1, 2 or 3 (Euro Stage IIIa) standards. It can lubricate the small gasoline engines and the piston-compressors.
- TP STAR MAX FE applies in all hydraulic systems, high or low pressure, equipped with very high performance filters, in the inlet or outlet of oil.
- TP STAR MAX FE lubricates the oldest or current gearboxes, manual or powershift.
- TP STAR MAX FE can be used in all seasons due to its high viscosité index :
  - very fluid at cold temperature, with easy cold starting of organs with an effective and rapid filtration, even in Winter season.
  - thick at high temperature, keep an optimal lubrication and a low oil consumption due to its non-conventionnal base oil components.

## PERFORMANCE LEVELS

API CI-4 / CH-4  
ACEA E7 / E5  
GLOBAL DHD-1  
JASO DH-1 (approved)



PRODUCT MEETING JASO M 355  
COMPANY GUARANTEEING THIS PERFORMANCE  
TOTAL LUBRIFIANTS

Meets the biggest OEM's requirements

Confirmed by official lab tests or service tests

### ● Engine application :

Conforms to the OEM's specifications for depolluted engines up to EURO Stage IIIa, US EPA TIER 3 or EURO IV standards, like :

CATERPILLAR : ECF-1a	CUMMINS : 20078 / 77 / 76
KOMATSU : EO-DH	VOLVO : VDS-3
MTU : Type 2	RENAULT : RLD-2, RLD
MAN : 3275	etc...

### ● Gearbox application :

API GL-4

Conforms to the specifications :

ZF TE ML 07D	etc...
CATERPILLAR TO-4 (SAE 30)	
KOMATSU Clutch : TO-30	
ALLISON C4	

### ● Hydraulic System application :

ISO VG 46 (after 100 working hours) HV

Suitable in place of following products :

JCMA HK 46W (Extended drain)
CATERPILLAR HYDO Advanced 10
KOMATSU HO-46 (HV)
CASE MS 1230

## CUSTOMER ADVANTAGE

### Rationalization

### Technical properties

### Self-adaptive patented

### Costs and Green-house gaz reduction

- Allows to strongly decrease the lubricant number needed for the whole vehicle park maintenance and avoids all mistakes in term of lubricant quality
- Reaches the highest quality levels required by the manufacturers for their engines (E7/CI-4), transmissions (GL-4/TO-4) and hydraulics systems (HK/HV)
- Enable longer drain intervals up to the maximum allowed by the OEMs
- Self-adaptive, its patented formulation fits to the lubricated organ requirement
- Provides substantial economies by reducing the fuel consumption
- Helps to decrease the exhaust Carbon Dioxide (CO<sub>2</sub>) production
- Its mid-Ash chemistry releases a use in engines equipped with DPF.

## CHARACTERISTICS

	Units	10W-30
Viscosity at 40°C	mm <sup>2</sup> /s	72
Viscosity at 100°C	mm <sup>2</sup> /s	12.3
Viscosity Index		170
TBN	mg KOH/g	12.8
Zinc value	ppm	> 1100
Pour point	°C	- 42

All values are typical values.

TOTAL LUBRIFIANTS  
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TP STAR MAX FE 10W-30  
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This lubricant, when used according to our recommendations and for the purpose for which it is intended, presents no particular hazards. A safety data sheet complying with current EC legislation can be obtained from your local commercial adviser.