



STAR MAX FE 10W-30



Very high performance "Low SAPS" lubricant specially developed for the lubrication of materials used in earthmoving, minings or quarries, providing substantial economies within the fuel consumption reduction.

PERFORMANCE LEVELS

API CJ-4 / CI-4+ / CI-4 / CH-4 / SL
ACEA E9 / E7 / E5 / A3/B4
JASO DH-2



Engine application

Approved according to :

- ✓ CUMMINS CES 20081
- ✓ DEUTZ DQC III-10 LA
- ✓ MTU Category 2.1
- ✓ MAN M 3575
- ✓ VOLVO VDS-4
- ✓ MB Approval 228.31
- ✓ RENAULT RLD-3

Conform to the OEM's specifications

- ✓ CATERPILLAR ECF-3 / ECF-2 / ECF-1a
- ✓ DETROIT DIESEL 93K218

Recommended for the TIER 4F engines :

- ✓ KOMATSU
- ✓ HITACHI
- ✓ PERKINS
- ✓ LIEBHERR
- ✓ CASE...

Gearbox application

API GL-4

Conforms to the specifications :

- ✓ ZF TE ML 07D
- ✓ CATERPILLAR TO-4 (SAE10W, 30)
- ✓ CATERPILLAR SATO
- ✓ ALLISON TES 439
- ✓ KOMATSU Clutch test
- ✓ ALLISON C4

Recommended for Gearboxes :

- ✓ DANA, KOMATSU, EATON...

Hydraulic system application

ISO VG 46 (after 100 working hrs) HV

Suitable in place of following products :

- ✓ JCMA HK 46W (Extended drain)
- ✓ CATERPILLAR HYDO Advanced 10W, 20 & 30
- ✓ KOMATSU HO-46 (HV)
- ✓ CNH MAT 3509 - CASE MS 1230

APPLICATIONS

TOTAL STAR MAX FE 10W-30 lubricates the Diesel engines of the last generation, notably the engines compliant to the TIER 1, 2, 3 or 4final (Euro Stage I, II, III or IV) standards.

It can lubricate the small gasoline or gas engines and the piston-compressors.

TOTAL STAR MAX FE 10W-30 applies in all hydraulic systems, high or low pressure, equipped with very high performance filters

TOTAL STAR MAX FE 10W-30 lubricates the oldest or current gearboxes, manual or powershift.

TOTAL STAR MAX FE 10W-30 can be used in all seasons due to its high viscosity 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 no-conventional base oil components.

PERFORMANCES AND CUSTOMER BENEFITS

- Allows to strongly decrease the lubricant number needed for the whole vehicle park maintenance and avoids all lubricant mistakes
- Reaches the highest quality levels required by the manufacturers for their engines (E9/CJ-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 (CIFE process)
- Helps to decrease the exhaust Carbon Dioxide (CO2) production
- Its Low-SAPS chemistry is recommended for engines equipped with exhaust gas after-treatment systems, like DPF, SCR, catalysator....

PHYSICAL AND CHEMICAL CHARACTERISTICS*

		Method	Value
Kinematic Viscosity at 40°C	mm ² /s	ASTM D445	73
Kinematic Viscosity at 100°C	mm ² /s	ASTM D445	12.1
Viscosity Index	-	ASTM D2270	163
Pour Point	°C	ASTM D97	-42
T.B.N	mgKOH/g	ASTM D2896	10.5
Sulphated Ash	% m/m	ASTM D874	1.0
Zinc value	ppm		>900

* 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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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