

Lubricant satisfying the strictest standards in force intended for use in applications such as Public Works, Transport and Agriculture.

PRO 450X 15W-40 has been developed for latest generation engines satisfying the Euro VI, Stage IV or Tier 4 Final standards. Compatible with previous engines.

PRO 450X 15W-40 is intended for heavy-duty diesel engines, to reduce greenhouse gas emissions and improve fuel economy

PERFORMANCES

Standards : ACEA E9-16/E7-16

API CK-4 / CJ-4 / CI-4 / CH-4

API SN/SM

Specifications :

DEUTZ DQC III-10 LA

MACK EO-S- 4.5*

RENAULT VI RLD-3* / RLD-2 / RLD

VOLVO VDS 4.5* / VDS-4 / VDS-3 / VDS-2

Caterpillar ECF -3, 2, 1-a

CUMMINS CES 20086 / 20081

DAF Euro VI motorizations

JASO DH-2

MAN M 3575

MERCEDES MB p 228.31

MTU Type 2.1

ZF TE-ML 03A

* **Approved quality.** Use recommended under manufacturers' warranties.

ORGANISATIONS & MANUFACTURERS - Scope of application –

ACEA E9-16 : For Diesel engines meeting Euro I/II/III/IV/V/VI engines fitted with or without SCR NOx reduction systems.

API CK-4 : For 2017 model year on-highway and Tier 4 Off-road exhaust emission standards as well as for previous model year diesel engines. with or without exhaust after treatment. Backwards compatible with API CJ-4 CI-4, CI-4 plus, CH-4

VOLVO VDS-4 .5 : Volvo engine oil approval, based on the API: CK-4 specification. Specification is intended for heavy-duty diesel engines, to reduce greenhouse gas emissions and improve fuel economy. The Volvo VDS-4.5 specification is backwards compatible with older Volvo specifications (VDS-4, VDS-3, etc.).

Technical data sheet



MERCEDES MB 228.31: for engines with **DPF / Standard oil change intervals.

RENAULT RLD-3 : ACEA E9-08 + Volvo VDS-4.

MAN M 3575: ACEA E9 + API CJ-4 for engines outside Europe.

CUMMINS CES 20086 : Special engine oil for Cummins heavy duty diesel engines with or without SCR and *EGR. To use this oil, it's mandatory to use Ultra-Low Sulfur Diesel (ULSD), too.

CUMMINS CES 20081 : for engine oil for heavy duty and midrange engines with exhaust aftertreatment.

MTU type 2.1: Multigrade oils low in ash-forming additives (Low SAPS oils).

CATERPILLAR ECF-3, 2, 1-a : to satisfy the requirements of Off road vehicles, in Caterpillar engines roduced in 2007 fitted with **DPF/ oil change intervals 500h.

Deutz DQC III-10 LA: High Performance oil for engines with post-treatment systems (SCR/**DPF).

*EGR: (*Exhaust gas recirculation*) Exhaust gas recirculation fitted to the exhaust system to combat pollution
**DPF: Particulate filter

USES

PRO 450X is suitable for Diesel and Petrol fuels, biofuels and other fuels approved by manufacturers.

TRANSPORT :

PRO 450X 15W-40 is suitable for Euro VI, Euro V EGR engines with or without particulate filters, and also for Euro V and Euro VI engines with SCR (Selective Catalytic Reduction) exhaust gas post-treatment systems using Ad-Blue.

Technical data sheet



PUBLIC WORKS EQUIPMENT:

- Applications for **Diesel engines** with EGR, with or without particulate filters, in public works equipment subject to severe conditions and especially for reduced emissions engines equipping recent models of public works machines: Stage IV or Tier 4 Final engines
- Applications in **hydraulic circuits** when engine oil is recommended (Caterpillar, Liebherr, Komatsu, Hitachi, etc.)
- **Transmission** applications when engine oil is recommended (Caterpillar, Liebherr, Komatsu, etc.)

AGRICULTURAL MACHINES :

- PRO 450X 15W-40 is suitable for Tier 4 Final and Stage IV engines with DOC (Diesel Oxidation Catalyst) required to satisfy the requirements of 2011 emissions standards).
- PRO 450X 15W-40 enables oil change intervals to be extended in accordance with manufacturers' recommendations (up to 500 hours of operation)

Technical data sheet

Characteristics	Standards	Units	15W40
Density at 15°C	NFT 60-101	Kg/m ³	877
Viscosity at à 40°C	ASTM D445	mm ² /s	115
Viscosity at 100°C	ASTM D445	mm ² /s	15.3
Index Viscosity	NF T 60-136	-	139
HTHS		cP	4.0
Pour Point	ASTM D2602	°C	<-35
CCS @ -20°C	ASTM D5293	mPa.s	< 7000
TBN	ASTM D2896	mg KOH/g	10
Ash content	ASTM D4951	masse %	Max 1

Characteristics are given for information only and correspond with our manufacturing standards. IGOL reserves the right to modify them to provide its customers with the benefits of technical progress. Before using this product read the instructions for use and the environmental impacts mentioned in the technical and safety data sheets. The information given above is based on the current level of knowledge relative to the product concerned. The product user should take all useful precautions relative to its use. IGOL can in no circumstances be held responsible for damage resulting from incorrect use.

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