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# Multiservice 4

SAE 10W/30

**Universal synthetic based lubricant for HD (Heavy Duty) Diesel engines, hydraulic systems, hydrostatic transmissions and “Powershift” transmissions of earth moving machinery. Zinc content higher than 900ppm.**

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PAKELO MULTISERVICE 4 SAE 10W/30 is a multigrade lubricant formulated with a blend of solvent refined paraffinic mineral base stocks and selected synthetic base stocks that confer to the finished product high thermal-oxidative resistance.

Thanks to its particular additive package and its synthetic base stocks, the product satisfies nearly all main world-wide specifications for Heavy Duty Diesel Engines (trucks, buses, earth moving machines, etc.): specifically the product also satisfies the severe requests of American Specification **API CI-4** and European Specification **ACEA E7**.

Furthermore PAKELO MULTISERVICE 4 SAE 10W/30 exceeds performance levels of the main American Constructors (Cummins, Caterpillar, etc.) and European ones (Mercedes-Benz, MAN, Renault, Volvo, etc.) and it enables consumers that possess wide range of vehicles to simplify the lubrication, save money, space, time and possible filling mistakes.

Its specific engine additive package guarantees high performance also for hydraulic systems, hydrostatic and Powershift transmissions of earth moving machinery.

PAKELO MULTISERVICE 4 SAE 10W/30 thus provides the following properties:

- **good low temperature properties** to enable easy start ups of the lubricated mechanical components;
- **high Viscosity Index** to guarantee a low power absorbance due to viscosity resistance during start-up at low temperatures and high viscosity at high temperatures to guarantee a suitable lubrication film: this characteristic is particularly appreciated in hydraulic systems in order to guarantee a correct functioning in every working and ambient condition;
- **excellent dispersant properties** that guarantee a great control of sludge and oil thickening also in case of high presence of soot and deposits. These phenomena are typical of modern engines that work at higher temperature due to the use of EGR system;
- **high detergent properties** that guarantee cleanness performance and long drain intervals;
- **high thermal-oxidative stability** at high working temperatures and **low volatility** also thanks to the presence of synthetic base stocks: in this way the evaporability of the product is further reduced (Noack's Test);
- **excellent wear control**;
- **anti-corrosive properties** to guarantee protection against combustion acid products and moisture caused by combustion and ambient;
- **good anti-foam properties** to reduce or to remove discontinuity of lubricant film caused by excessive formation of inner foam;
- **good compatibility** with gaskets.

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## Application fields

PAKELO MULTISERVICE 4 SAE 10W/30 is recommended for hydraulic systems, hydrostatic, Powershift and automatic transmissions of earth moving machinery.

The product, thanks to its engine performance levels, can also be used in heavy duty Diesel engines, naturally aspirated or turbocharged too.

It can be adopted to extend oil drain intervals, with respect of Constructors' recommendations and combined with a complete monitoring of oil in service through specific oil analyses.

Take always into consideration correct oil drain intervals to obtain maximum engine life.

## Performance levels

**ACEA E7, API CI-4 / CH-4 / CG-4/ CF-4 / CF, MB 228.3, MAN M3275, Volvo VDS-2, Renault Trucks RD-2 / RLD, Mack EO-M Plus, Caterpillar ECF-2 / ECF-1a, Cummins CES 20.078, Cummins CES 20.077 / CES 20.076, Allison C4.**

## Chemical-Physical Characteristics

Multiservice 4	Method analysis	Unit measure	Value SAE 10W/30
Density at 15°C	ASTM D1298	kg/l	0,880
Kinematic Viscosity at 40°C	ASTM D445	cSt	73,2
Kinematic Viscosity at 100°C	ASTM D445	cSt	11,2
Viscosity Index	ASTM D2270	-	144
C.C.S. Viscosity at -25°C	ASTM D5293	cP	6.700
HT-HS Viscosity at 150°C / 10 <sup>6</sup> s <sup>-1</sup>	ASTM D4683	cP	3,50
T.B.N. (Total Base Number)	ASTM D2896	mg(KOH)/g	11,3
Sulphated Ash	ASTM D874	% (w/w)	1,45
Flash Point (C.O.C.)	ASTM D92	°C	220
Pour Point	ASTM D97	°C	-34
Noack evaporability test	ASTM D5800	% (w/w)	12,2

*The data just above refer to average values and must not be understood as guaranteed characteristics.*

*This Technical Data Sheet has been carefully checked to guarantee complete and precise information. However, we do not take any responsibility in case of damages caused by any mistakes or omissions. Due to continual product research and development, the information contained herein is subject to change without notification.*