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# Hydraulic KHE-56

## Very High Viscosity Index **semi-syntetic** lubricant for hydraulic systems with antioxidant, anti-wear and antifoam additives. (V.I. 200).

PAKELO HYDRAULIC KHE-56 is a Very High Viscosity Index semi-synthetic lubricant formulated with antioxidant, antirust, anti-wear and antifoam additives.

Thanks to its chemical and physical characteristics the product has been developed for the most modern hydraulic systems working even under severe conditions.

PAKELO HYDRAULIC KHE-56 transfers power with great promptness and uniformity under all working and ambient conditions lengthening life of systems operating at high pressures, and/or at high pump speed (vane pumps, gear pumps, piston pumps, etc.).

The product provides the following properties:

- **Very High Viscosity Index** that enables minimum viscosity changes, if compared to common hydraulic lubricants, when the fluid is exposed to different operating temperatures;
- **very good performance at low temperature:** this property enables to extend the operating temperature and easy start-ups at low temperatures. This characteristic is also confirmed by CCS viscosity (Cold Cranking Simulator) at -30°C less than 6600 cP. The product can be classified as SAE 5W-30 following SAE J300 classification;
- **high anti-wear properties** to increase efficiency, life of pumps and of the operating parts in the system;
- **high thermal stability** that allows the use of the product in hydraulic systems operating also at high temperatures and pressures without causing deposits and sludge;
- **good oxidative stability** that allows longer oil drain intervals and thus avoids early oil thickening;
- **high hydrolytic stability** which enables to protect the oil being used also when contaminated with small percentages of water;
- **good demulsivity:** the lubricant can easily separate from the water that could contaminate the system avoiding an accelerated process of oxidation;
- **high filterability** even with presence of water avoiding in this way filter plugging and guaranteeing longer filter life;
- **anticorrosion and antirust capability** to provide efficiently the protection of all metallic components of the hydraulic system;
- **antifoam properties** to avoid the presence of foam and air that reduce system efficiency due to the different compressibility ratio between lubricant and air/lubricant mix;
- **compatibility** with **gaskets** and **metals** normally used in hydraulic systems.

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## Application fields

PAKELO HYDRAULIC KHE-56 satisfies a wide range of applications, in terms of types of pumps (vane, gear, piston pumps, etc.), of metals used in the working system and of resistance to severe working conditions (high temperatures, pressure, etc.).

The product has been specifically developed to guarantee very high efficiency in high pressure hydraulic and hydrostatic systems of earth moving machines.

For the correct Viscosity Grade selection please refer to pump's Constructor recommendations and ambient temperatures.

## Performance levels

The additive package used has enabled, in the set Viscosity Grades, to overcome the following Specifications/Classifications: **ISO 6743-4 HV**, **Afnor NFE 48-602**, **ISO 11158**, **DIN 51524 Part 3 HVLP**, **Afnor NFE 48-603 HV**, **ASTM D6158**, **Denison HF-0 / HF-1 / HF-2**, **Eaton Vickers I-286-S / M-2950-S**, **Cincinnati Machine P-68 / P-69 / P-70**, **Afnor NFE 48-690(dry)**, **Afnor NFE 48-691(wet)**, **U.S. Steel 126 / 127 / 136**, **JCMAS HK**, **Bosch** variable vane pumps, **Rexroth RE 90220**, **Sauer Danfoss 520L0463**, **General Motors (LS-2) LH-03-1 / LH-04-1 / LH-06-1**, **SEB 181222**.

## Chemical-Physical Characteristics

Hydraulic KHE-56	Method analysis	Unit measure	Value
Density at 15°C	ASTM D1298	kg/l	0,860
Kinematic Viscosity at 40°C	ASTM D445	cSt	56,2
Kinematic Viscosity at 100°C	ASTM D445	cSt	11,7
Viscosity Index	ASTM D2270	-	210
Flash Point (C.O.C.)	ASTM D92	°C	210
Pour Point	ASTM D97	°C	-38
C.C.S. Viscosity at -30°C	ASTM D5293	cP	5400

*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.*