Product information
Hydraulic Oil HEES 46

PI 34/07/02/2024



Description
High-performance hydraulic oil based on synthetic esters. Rapidly biodegradable and toxicologically safe when unmixed. Thanks to the high thermal stability of the base oils, the aging process is significantly reduced even at elevated temperatures. This decisively helps reduce the formation of sludge, improves cleanliness and promotes the reliability of the hydraulic systems. The excellent oxidation resistance permits lengthy oil life (changing intervals). The outstanding wear-protection technology is effective in both low and high load conditions. Special additives guarantee consistent viscosity and a rapid, exact response from the hydraulic system, even under significant temperature fluctuations. Has good corrosion protection behavior even if water is present. This ensures that hydraulic components are optimally protected in all operating conditions. Awarded the "Blue Angel" environmental label.

Properties
- excellent wear resistance
- outstandingly adherent
- excellent low temperature behavior
- biologically degradable
- wide operating temperature range
- good corrosion protection
- excellent viscosity/temperature properties
- miscible with all blended and unblended mineral oils
- protects the environment

Specifications / Approvals
DE-UZ 178 • Hydrauliköl DIN 51524 HVLP 46 • Hydrauliköl DIN 51524 Teil 2 HLP 32 • Hydrauliköl DIN 51524 Teil 2 HLP 46 • Hydrauliköl DIN 51524 Teil 2 HLP 68 • Hydrauliköl DIN ISO 15380 HEES 46 • Hydrauliköl VDMA 24568 HEES 46

Technical data

ISO viscosity class	VG 46 DIN 51519
Density at 15 °C	0,920 g/cm³ DIN 51757
Viscosity at 40 °C	46,0 mm²/s ASTM D 7042-04
Viscosity at 100 °C	9,4 mm²/s ASTM D 7042-04
Viscosity index	194 DIN ISO 2909
Pour point	-45 °C DIN ISO 3016

Technical data

Flash point	280 °C DIN ISO 2592
Demulgation characteristics at 54 °C	20 min DIN ISO 6614
Air separation capacity	<5 min DIN ISO 9120
Foaming behavior at 24 °C	30/0 ml ISO 6247
Foaming behavior at 93.5 °C	50/0 ml ISO 6247
Foaming behavior at 24 °C after 93.5 °C	30/0 ml ISO 6247
	90 g iodine/100g DIN EN 14111
Neutralization number	0,5 mg KOH/g DIN 51558 Teil 1
Corrosion effect on steel	0-A DIN ISO 7120
Corrosion effect on copper	1-100 A3 DIN EN ISO 2160
FZG gear rig test, standard test A/8, 3/90	Schadenskraftstufe >12, Spez.Gew.Änderung <0,27 mg/KWh DIN 51354
Behavior towards nitrile rubber (NBR) seals	verträglich DIN 53538 Teil 1
Biodegradability after 21 days	> 90 % OECD 301 F

Areas of application
Specially for mobile applications in hydraulic systems in construction, forestry and agricultural machinery such as floating dredgers, sluices, snow cats, excavators, tractors, etc. where high temperature fluctuation cycles are the norm and/or for use in environmentally sensitive areas (water protection areas and watercourses). As usual in the case of rapidly biodegradable hydraulic oils, it is necessary to clarify material compatibility in advance with the manufacturer.

LIQUI MOLY GmbH
Jerg-Wieland-Str. 4
89081 Ulm-Lehr

Phone: +49 (0)731/1420-0
Fax: +49 (0)731/1420-82
e-mail: info@liqui-moly.de

Technical hotline: +49 (0)731/1420-871
www.liqui-moly.com

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Application
The specifications and instructions from the unit or vehicle manufacturer must be followed. Optimum effect only when the product is used unmixed.

Available pack sizes

20 l Canister plastic	4737 D-GB-I-E-P
60 l Black plate barrel	4740 D-GB
205 l Black plate barrel	4726 D-GB

Our information is based on thorough research and may be considered reliable, although not legally binding.

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