

Hydraulic Oil HEES 46

Description

High-performance hydraulic oil based on synthetic esters, rapidly biodegradable and toxicologically harmless. Because of the high thermal stability of the base oils, the aging process is significantly reduced even at elevated temperatures. This decisively helps to reduce the formation of sludge, improve cleanliness, and promote the reliability of the hydraulic systems. Excellent oxidation resistance permits extended oil change intervals. The outstanding wear-protection technology is effective in both, low and high load conditions. **Special additives ensure consistent viscosity even at high temperature fluctuations as well as a swift and precise response of the hydraulic system.** Maintains good corrosion protection behavior even if water is present. The hydraulic components are thus optimally protected in all operating conditions.

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 and approvals

Hydrauliköl VDMA 24568 HEES 46 • Hydrauliköl DIN 51524 HVLP 46 • RAL- UZ 178

Technical data

ISO viscosity class	VG 46 DIN 51519
Density at 15 °C	0,92 g/cm ³ DIN 51757
Viscosity at 40 °C	46 mm ² /s ASTM D 7042-04
Viscosity at 100 °C	9,4 mm ² /s ASTM D 7042-04
Viscosity index	194 DIN ISO 2909
Pour point	-45 °C DIN ISO 3016
Flash point	280 °C DIN ISO 2592
Demulgation characteristics at 54 °C	20 min DIN ISO 6614



Technical data

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
Neutralization number	0,5 mg KOH/g DIN 51558 Teil 1
Oxide ash	<0,01 g/100g DIN EN ISO 6245
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 % CEC L-33-T-82

Areas of application

Specially for mobile applications in hydraulic systems in construction, forestry and agricultural machinery such as dredgers, hydraulic locks, snowcats 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.

Application

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

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Available pack sizes

20 l Canister plastic	4737
	D-GB-I-E-P
60 l Drum sheet metal	4740
	D-GB
205 l Drum sheet metal	4726
	D-GB

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