

# WACO HEES (HEES 46)

Synthetic-Esterbasis Bio-Hydraulic Oil

## Description:

**WACO HEES (HEES 46)** is a fully synthetic, quickly biodegradable hydraulic- and circulation oil based on synthetic ester, type HEES. Because it is quick biodegradable it does not pollute the soil or the water.

**WACO HEES (HEES 46)** is because of its high environmental digestibility especially recommended for application at engines at the building trade, the agriculture and the forestry.

The requirements on hydraulic fluids in accordance with HLP and HVLP as specified in DIN 51524 Part 2 and Part 3 are met in full, or exceeded.

Before using in hydraulic aggregates, the recommendations of the machine manufacturer must be considered or the adjustment guidelines in accordance with VDMA standard sheet 24 569 must be followed.

## Properties

- Extremely high pressure susceptibility
- Not water-endangering
- Non-toxic, physiological safety
- Free of heavy metal
- Very good cold flow behaviour
- Ageing and oxidation stability
- Excellent viscosity-temperature behaviour
- High wear protection
- Shear stability at extreme conditions
- Excellent wear and corrosion protection
- Neutral towards sealing materials

## Effects

- High operating liability of the technical system
- Reduction of kinds
- Highest standard performance
- Quickly biodegradable
- Demulsifying (water separating)
- Engine oil for all seasons
- Multigrade character

## Suitable for/ we recommend this product for

HLP/HVLP	DIN 51524 Part 1, 2 & 3
EATON BROCHURE	03-401-2010
ISO	15380 HEES 46
JCMAS	P042 HKB
PARKER DENISON	HF-1, HF-2, HF-6
SWEDISH STANDARD	SS 15 54 34 Category V
USDA	Biopreferred®
VDMA	24568, 24570
US	Vessel General Permit (VGP)

## Utilization

- Universal in all hydraulic- and circulation systems, especially where the hydraulic oil gets in contact with the environment, e.g. hydraulic system at building trade, agriculture and forestry such as excavators, bulldozers, forestry engines, lock hydraulic, Sewage treatment plants, dredgers etc.

## Disposal:

- **WACO HEES (HEES 46)** is assigned to the disposal scheme 13 01 12.
- **WACO HEES (HEES 46)** is assigned to category 1 of used oils and thus is free for disposal.

## Miscibility:

- **WACO HEES (HEES 46)** is digestible with all materials usually to be found in a hydraulic system. However, it is recommended to take only **WACO HEES (HEES 46)** when refilling.

## WACO HEES (HEES 46)

Article No.	Packaging unit	
1204 105	Can	20 L
1204 106	Drum	60 L
1204 108	Drum	200 L

## Typical characteristics:

Specific weight at 15°C	kg/m <sup>3</sup>	920
Viscosity at 0°C	mm <sup>2</sup> /s	370
Viscosity at 40°C	mm <sup>2</sup> /s	46
Viscosity at 100°C	mm <sup>2</sup> /s	9,5
Viscosity index		183
Flash point COC	°C	285
Pourpoint	°C	-39
Operating temperature range	°C	-20 to +90
Biodegradability	%	>90

Data are subject to change.

Attention: Service instructions should be observed!

DV/HY/-  
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