



## Hydraulic Oil ZF 46 HLP

Mineral Zinc Free Hydraulic fluid

Product Code: 78850

**Hydraulic Oil ZF 46 HLP** is a high performance zinc-free ashless anti-wear hydraulic oil developed to provide excellent performance in hydraulic systems, power transmission and general machine lubrication operating under moderate to severe conditions.

**Hydraulic Oil ZF 46 HLP** is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermo-oxidative stability.
- Exceptional anti-wear property results in longer pump and component life.
- Superior demulsibility helps in faster separation of water from oil and resists formation of emulsions.
- Advanced ashless additive technology reduces environmental impact in case of accidental spillage
- Special rust & corrosion inhibitors protect multi-metallurgy components even in presence of moisture
- Rapid air release property minimizes chances of pump cavitations leading to trouble free operations
- Compatible with multi-metals and sealing materials commonly used in hydraulic systems.
- Designed for older hydraulic pumps containing silver or silver-plated parts.

**Hydraulic Oil ZF 46 HLP** exceeds the following performance criteria:

DIN 51524 Part 2 HLP  
Vickers M-2950-S

AFNOR NFE 48-603 HM  
Vickers I-286-S

Cincinnati P-70  
Denison HF-1

### Typical Analysis

Properties	Unit	Method	Typical Value
ISO VG Class			46
Density @15°C	kg/m <sup>3</sup>	ASTM D4052	872
Kin. Viscosity @40°C	mm <sup>2</sup> /s	ASTM D7042	47
Kin. Viscosity @100°C	mm <sup>2</sup> /s	ASTM D7042	7.1
Viscosity Index		ASTM D2270	104
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7436	-21
FZG A/8,3 90°C	min	DIN 51354-2	12
Air Release Value @50°C	Minutes	ASTM D3427	Pass
Demulsibility @54°C	Minutes	ASTM D1401	Pass

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