



# SANDVIK PERFORMANCE FLUIDS

## LONG-LIFE HYDRAULIC OIL

### SANDVIK OH46-ZF

TECHNICAL SPECIFICATION

#### DESCRIPTION

The products of the Sandvik OH46-ZF series are universal, zinc and ash-free lubricating oils and hydraulic fluids. They are based on special hydrotreated base oils (group III base oils). They offer high natural shear-stable viscosity index ( $VI > 140$ ). Sandvik OH46-ZF products are based on newest zinc and ash-free additive technology. The combination of base oils and synergistic acting additives guarantees excellent hydraulic and gear oil performance.

Sandvik OH46-ZF series are based on newest sulphur/phosphorous additive technology in combination with selected antioxidant and corrosion protection additives. These specific additives guarantee a very robust antiwear and extreme pressure performance. The products of the Sandvik OH46-ZF series have excellent wear protection properties in hydraulic components (pumps and motors). The Vickers vane pump test shows excellent results (very low wear). All performance tests have shown extraordinarily good results compared to standard mineral based products.

The Sandvik OH46-ZF series show excellent copper compatibility and good yellow metal corrosion protection. The corrosion protection properties show excellent results in standard test condition as well as in humid test conditions.

The products of the Sandvik OH46-ZF series offer very high oxidation stability in conjunction with excellent and high thermal stability.

The Sandvik OH46-ZF series offer twice to three times longer service intervals in comparison to conventional standard hydraulic fluids based on mineral oils.



#### KEY FEATURES

- Universal hydraulic and gear oils based on hydrotreated base oils
- Excellent low foaming properties
- Highest temperature and ageing stability
- Excellent viscosity temperature behaviour (multigrade characteristic)
- High shear-stable viscosity index ( $VI > 140$ )
- Excellent low temperature properties and excellent high temperature properties
- Zinc and ash-free, heavy metal-free
- Excellent wear protection, FZG  $> 12$ , FE8 – pass excellent ( $< 5\text{mg}$ )
- Extended oil drain intervals (twice to three times longer lifetime in comparison to standard mineral oils)
- Multifunctional fluids
- High corrosion protection (steel and yellow metals)

## APPLICATION

Demulsifying lubricating oil and hydraulic oil with high natural, shear-stable viscosity index for universal application in hydraulics and gears. Can be used in all kind of mobile and stationary hydraulic applications where hydraulic fluids HVLP according to DIN 51524-3 is recommended (HV according to ISO 6743-4).

Sandvik OH46-ZF can be used in machine tools, plastic injection machines, in stationary and mobile hydraulics.

Sandvik OH46-ZF products fulfill and surpass the antiwear requirements of industrial gear oils according to DIN 51517-3 (EP gear oils). Sandvik OH46-ZF products can be used as an EP industrial gear oil.

The scuffing protection properties according to FZG A/8.3/90 have been surpassed with a failure load stage > 12 with an excellent result. The Sandvik OH46-ZF products show excellent wear protection properties in roller bearing wear test. The relevant tests in FE8 roller bearing wear test at 7.5 rpm/80 °C test temperature with an axial load of 80 kN show excellent low wear results.

All relevant requirements for industrial EP gear oils are fulfilled and surpassed. The Sandvik OH46-ZF series can be used as a hydraulic fluid as well as industrial gear oils. The products can universally be used. The formulation is robust under standard condition as well as under high oxidation and thermal load. The formulation is very stable also in the presence of contamination, humidity and water.

The products of Sandvik OH46-ZF are high-value semi-synthetic hydraulic fluids based on hydrotreated base oils. They can also be used as lubricating oils in industrial gears.

The products of the Sandvik OH46-ZF series are universal lubricants. They are multifunctional fluids and can be used as a hydraulic fluid HLP, HVLP (HM, HV) as well as industrial gear oil CLP. The Sandvik OH46-ZF series can be used in all kind of hydraulic applications, presses, machine tools, plastic injection machines where demulsifying hydraulic and lubricating oils are required.

## SPECIFICATIONS

---

**The Sandvik OH46-ZF series fulfill and surpass the requirements according to**

---

DIN 51524: HLP/HVLP

---

ISO 6743: HM/HV

---

DIN 51517-3: CLP

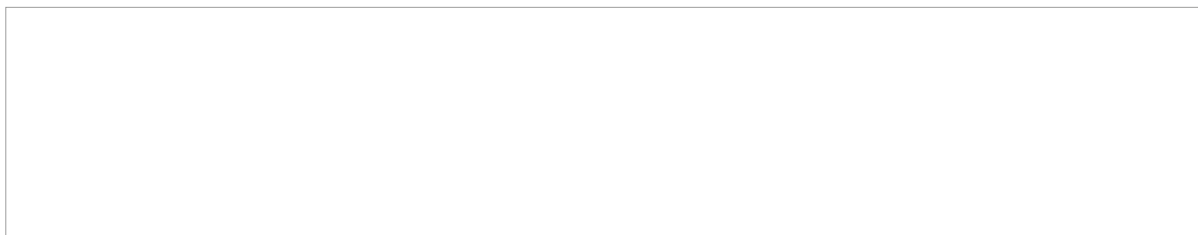
---

ISO 6743-6: CKC

---

## TYPICAL CHARACTERISTICS

Product name		OH46-ZF	
Properties	Unit		Test method
ISO VG		46	DIN 51519
Kinematic viscosity			DIN EN ISO 3104
at - 20 °C	mm <sup>2</sup> /s	2.375	
at 0 °C	mm <sup>2</sup> /s	412	
at 40 °C	mm <sup>2</sup> /s	46	
at 100 °C	mm <sup>2</sup> /s	8.0	
Viscosity index	-	148	DIN ISO 2909
Density at 15 °C	kg/m <sup>3</sup>	843	DIN 51757
Flash point (COC)	°C	238	DIN ISO 2592
Pourpoint	°C	-45	DIN ISO 3016
FE8 wear test, D-7.5/80 KN/80 °C/80 h roller wear	ISO VG 32 mg	pass excellent	DIN 51819-3
Vickers V 1042 vane pump test	ISO VG 32		DIN 51389-2
- weight loss ring	mg	pass excellent	
- weight loss vane	mg	pass excellent	



Sandvik Mining reserves the right to make changes to the information on this data sheet without prior notification to users. Please contact a Sandvik representative for clarification on specifications and options.