HYDRAULIC OILS

ADDINOL HYDRAULIC OIL HLP 46 AF, 68 AF

PRODUCT DESCRIPTION

ADDINOL Hydraulic oils HLP 46 AF and HLP 68 AF are manufactured from high-quality mineral oil raffinates with a zinc-free additive combination, which enhances resistance to ageing and corrosion and ensures excellent protection against wear.

SPECIFICATIONS

Meets the classification of:

- **DIN 51524-2**
- **DIN EN ISO 6743-4 (HM)**
- **DIN 51517-3 (CLP)**

APPLICATION

- Excellent suitability as pressure liquid for hydraulic devices with high thermal loads
- Particularly usable as pressure liquid for hydraulic devices where water can infiltrate the system
- Fit for the lubrication of bearings and gears
- Excellent applicability for the lubrication of roller devices, which require hydraulic oils free of heavy-metal for ecological reasons

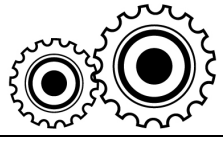
Viscosity grade corresponds to:

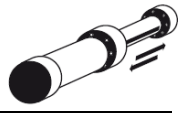
- **ISO classification 3448**
- **DIN 51519**

DELIVERY

Delivery preferable in tanker, drums and 20 l cans.

CHARACTERISTICS	ADVANTAGES AND BENEFITS
• Zinc-free additives	• **Low contamination of wastewater**
	• **Does not form residues during operation**
• Very good additives with EP-properties	• **Usable for high thermal loads**
• Very good demulsifying ability and good water separation ability	• **Infiltrated water and moisture will be separated**
• Excellent air separation ability	• **Good power transmission**
• High purity	• **Good filterability**
• Good compatibility with conventional sealing materials and paints	• **Leakages are avoidable**
• High thermal-oxidative stability	• **Extended oil change intervals possible**





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SPECIFICATIONS AND TYPICAL PARAMETERS

Feature	Test conditions / unit		HLP 46 AF	HLP 68 AF	Method acc. to
ISO viscosity grade			46	68	DIN 51519
Density	at 15°C	kg / m³	865	875	DIN 51757
Viscosity	at 0°C	mm²/s	700	1300	ASTM D 7042
	at 40°C	mm²/s	46	68	
	at 100°C	mm²/s	6.9	8.7	
Viscosity index			105	99	ISO 2909
Flash point	COC	°C	240	250	DIN EN ISO 2592
Pour point		°C	-27	-23	ASTM D 7346
Demulsifying ability	at 54°C	min	10	15	DIN ISO 6614
Oxidized ash		%	0.01		DIN EN ISO 6245
Ageing behaviour, Increment of NN	after 1000h	mg KOH / g	< 2.0		DIN EN ISO 4263-1
Corrosion protection properties against steel	method A		passed		ISO 7120
Degree of copper corrosion	100°C, 3h		1		EN ISO 2160
Mech. test in FZG machine A/8.3/90		scuffing load stage	12		ISO 14635-1
Air separation ability	at 50°C	minutes	7	9	DIN ISO 9120
Mech. test in vane pump			passed		DIN 51389-2
Foaming characteristics	at 24°C	ml / ml	< 20 / 0		ASTM D 892
	at 93.5°C	ml / ml	< 20 / 0		
	at 24°C after 93.5°C	ml / ml	< 20 / 0		

ADDINOL - The Experts for High-Performance Lubricants

We at ADDINOL develop and produce more than 600 high-performance lubricants of the new generation. Among these are automotive lubricants for highest demands and pioneering developments for industrial applications. Our customers all over the world benefit from the high and stable quality of our ADDINOL high-performance lubricants, our know-how and the individual customer advisory service of our competent experts. Our company has world wide activities. ADDINOL high-performance lubricants are distributed by more than 70 international partners.

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