



HYDRAULIC OILS

ADDINOL HYDRAULIC OIL HLP 10, 22, 32, 46, 68, 100

PRODUCT DESCRIPTION

ADDINOL hydraulic oils HLP are produced on the basis of high-quality mineral oil raffinates as well as a zinc-containing active substance combination which assures an increased ageing behaviour and improved anti-wear and corrosion-protective properties.

APPLICATION

- Excellent suitability as pressure fluids for industrial and mobile hydraulic systems of different construction types
- Usable in particular for devices which are operated with high pressure
- Highly suitable for specific wear protection demands
- Fit for the lubrication of bearings and gears according to the manufacturer instructions
- Beneficial for all applications which require hydraulic oils in compliance with DIN 51524-2 with demulsifying properties

SPECIFICATIONS

Meets the requirements of:

- DIN 51524-2 (HLP)
- DIN EN ISO 6743-4: HM
- Bosch-Rexroth RE 90220 (ISO-VG 22, 32, 46, 68, 100)

Hydraulic Oil HLP 46 meets:

- Engel – Injection Moulding Machines
- Arburg – Injection Moulding Machines

Viscosity grade corresponds to:

- ISO classification 3448

DELIVERY

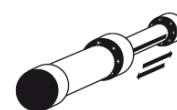
Delivery preferable in tanker, drums and 20L cans.

CHARACTERISTICS

- Very good demulsifying ability and good water separation ability
- Excellent air separation ability and low foaming tendency
- Good compatibility with conventional sealing materials and paints
- Excellent wear protection properties
- High thermal-oxidative stability
- Recommended and listed by many device and

ADVANTAGES AND BENEFITS

- Protection against infiltrated water
- Decrease of foam formation
- Leakages are avoidable
- Faultless operation also in multi-metal systems
- Slow oil ageing with extended oil change intervals
- Versatile application, reduce the risk of misapplication





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SPECIFICATIONS AND TYPICAL PARAMETERS

Feature	Test conditions / unit		HLP 10	HLP 22	HLP 32	HLP 46	HLP 68	HLP 100	Method acc.
ISO viscosity class			10	22	32	46	68	100	ISO 3448
Density	at 15°C	kg/m ³	851	848	849	854	868	881	DIN 51757
Viscosity	at 0°C	mm ² /s	57	175	299	475	946	1750	ASTM D 7042
	at 40°C	mm ² /s	10.5	22.6	31.9	45.8	69.4	99.1	
	at 100°C	mm ² /s	2.8	4.6	5.7	7.2	9.2	11.1	
Viscosity index			111	120	120	118	108	97	DIN ISO 2909
Flash point	COC	°C min.	173	222	247	268	270	270	DIN EN ISO 2592
Pour point		°C max.	-42	-39	-36	-30	-24	-22	ASTM D 7346
Air separation ability	at 50°C	minutes	1,5	3	< 3.5	< 6	< 8	< 12	DIN ISO 9120
Demulsifying properties	at 54°C	minutes	5	5	10	10	12	5**	DIN ISO 6614
Mech. test in FZG machine A/8.3/90		scuffing load stage	n.a.	> 10	≥ 11	≥ 12	≥ 12	≥ 12	ISO 14635-1
Mech. test in vane pump			Passed						DIN 51389-2
Oxidized ash		%	< 0.15						DIN EN ISO 6245
Ageing behaviour Increment of NN	after 1000 h	mg KOH/g	< 1.5						DIN EN ISO 4263-1
Level of steel corrosion properties	method A		Passed						DIN ISO 7120
Level of copper corrosion	100°C, 3h		1						DIN ISO 2160
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						

** Demulsifying properties at 82°C

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 90 international partners.

The data given in this product sheet represent our current level of knowledge and experience. Due to the various specific application they do, however, not discharge the user from his own examination. The information provided herein may not be used to derive a legally binding warranty of specific properties or the suitability for a certain purpose of application. Detailed security-concerning and toxicological data as well as security instructions for each product can be taken from the corresponding Material Safety Data Sheets (MSDS). High-performance lubricants from ADDINOL are under continuous development. Therefore, ADDINOL Lube Oil GmbH keeps the right to change technical data in this product data sheet without notification. In case of doubt, please do not hesitate to contact our customers' advisory service.