



## HYDRAULIC OILS

# ADDINOL HYDRAULIC OIL HVLP 15, 32, 46, 68

### PRODUCT DESCRIPTION

ADDINOL Hydraulic oils HVLP are mineral oil based, zinc-containing pressure fluids with an excellent viscosity-temperature performance and possess relevant multi-grade characteristics. This assures that even under extreme temperature variations or when starting the system at low temperatures, a maximum steadiness of the operational performance of the installation is ensured.

### APPLICATION

- Excellent suitability in modern hydraulic systems
- Particularly suitable for the application in outdoor hydraulic systems for all season use
- Highly suitable for operating under strongly differing temperatures, such as in barrier systems, scrap presses, sluices and weir systems
- Fit for hydrostatic circulations in building machinery, forklifts, container and municipal utility vehicles

ADDINOL Hydraulic oil HVLP 15:

- Excellent multi-grade hydraulic oil at low temperatures
- Fit as shock absorber oil according to manufacturer instructions

### CHARACTERISTICS

- Outstanding wear protection and ageing behaviour
- High shear stability and oxidation resistance
- Improved seizing behaviour
- Very good viscosity-temperature behaviour
- Multi-grade character
- Improved corrosion protection
- Very good demulsifying ability

### SPECIFICATIONS

Meets the requirements acc. to:

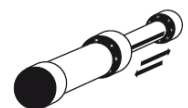
- DIN 51524-3 (HVLP)
- ISO 11158 (HV)
- AFNOR NF E 48603 (HV)
- CETOP RP 91 H (HV)
- DIN EN ISO 6743-4 (HV)
- Bosch-Rexroth RD/RE 90220 (without ISO-VG 15)

### DELIVERY

Delivery preferable in drums and 20L cans.

### ADVANTAGES AND BENEFITS

- Faultless operation also in multi-metal systems
- Long service life
- Reduction of wear and seizing at heavy loads, particularly at shock loads
- Particularly suitable for devices in cold surroundings (climate, mountains, winter sport regions, winter service, cold storage houses, freezing plants)
- Reduction of the product range – simplification of logistics
- Long lifetime of the devices
- Protection against infiltrated water





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## SPECIFICATIONS AND TYPICAL PARAMETERS

Feature	Test condition / Unit		HVLP 15	HVLP 32	HVLP 46	HVLP 68	Method acc. to	
ISO viscosity class			15	32	46	68	DIN 51519	
Density	at 15°C	kg / m <sup>3</sup>	836	852	860	867	DIN 51757	
Viscosity	at -20°C	mm <sup>2</sup> /s	290	1340	2008	4445	ASTM D 7042	
	at 0°C	mm <sup>2</sup> /s	76	239	363	669		
	at 40°C	mm <sup>2</sup> /s	14,5	31	46	69		
	at 100°C	mm <sup>2</sup> /s	3.9	6.6	8.7	12		
Viscosity index			177	176	172		DIN ISO 2909	
Flash point	COC	°C min.	185	234	247	254	DIN EN ISO 2592	
Pour point			°C max.	-57	-40	-39	-36	ASTM D 7346
relative drop in viscosity by shearing after 20h	40°C	%	10.5	12.5	15.3	21.1	DIN 51350-6	
	100°C	%	13.1	16.3	19.0	25.1		
Ageing behaviour Increase of NN	after 1000h	mg KOH/g	< 1.0				DIN EN ISO 4263-1	
Corrosion protection on steel	method A and B			passed			DIN ISO 7120	
Corrosivity on copper	100°C, 3h	corr. level	1				DIN EN ISO 2160	
Mech. test in FZGmaschine A/8.3/90			scuffing load stage	--	12		ISO 14635-1	
Air separation ability	at 50°C	minutes	1	4	6	10	ISO 9120	
Demulsifying properties	at 54°C	minutes	5		10		DIN ISO 6614	
Mech. test in vane pump			--	passed			DIN 51389-2	
Foaming characteristics	at 24°C	ml/ml	< 50 / 0	< 20 / 0			ASTM D 892	
	at 93.5°C	ml/ml	< 50 / 0	< 20 / 0				
	at 24°C after 93.5°C	ml/ml	< 50 / 0	< 20 / 0				

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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.