

## Hydraulic oil H46

**Bardahl Hydraulic Oil** is the group designation for a series of complete mineral oils, which are not only intended for use in hydraulic systems, but can also be used for oil baths circulation lubrication. This line of products is versatile and has many applications.

**Bardahl Hydraulic Oil** possess the characteristics that also apply to the Bardahl Hydraulic Oil Additives. These oils have been developed for use in hydraulic systems, in which mineral oils are used. The product is composed of oxidation-resistant base oils and contains baptisms against corrosion and oxidation formation. These hydraulic oils contain Bardahl's special formula of polar-organic high-pressure substances, which provide an oil film, which adheres to the material and cannot be squeezed away by high pressures and temperatures. Due to these good anti-wear properties, a long service life of the parts is ensured. It was mainly the hydraulic systems of the "hydrostatic type"\*, which, due to high working pressures, necessitated an oil with exceptionally good anti-wear properties. The very high lubricating properties make these oils extremely suitable for use in gearboxes with hydraulic drive and combined lubrication.

### Wear

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The Bardahl Hydraulic Additive has served as the basis for the development of **Bardahl Hydraulic Oil H46** product. It is therefore self-evident that this line of hydraulic oils have extremely good high pressure properties.

### Viscosity

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The viscosity of a hydraulic oil is generally kept as low as possible, to minimize friction loss. The downside when using a thin oil is the occurrence of internal leakage losses, which can significantly reduce efficiency. The viscosity of the oil should therefore show as few deviations as possible in the event of temperature changes. The viscosity index (V.I.) improved dopes present in the liquid must ensure that the viscosity deviates as little as possible from the most ideal for the system in question.

### Temperature

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The temperature in the hydrostatic systems can increase significantly due to the high pressures. The oil must therefore prevent that due to increased temperatures and the oxygen present, a rapid oxidation or even charring (cavitation) occurs. The presence of a solidification point lowering ensures that the oil remains liquid even at a low temperature. This solidification point decreases as the viscosity increases.

### Corrosion

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The presence of Bardahl components ensures optimal protection against rusting, due to an oil film, which adheres to the material and retains its lubricating capacity even after a long standstill. It is therefore important that any water (or steam) present is separated by the oil as quickly as possible. A good water secreting capacity is indispensable for every hydraulic oil.

### Specifications

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AFNOR - NF E 48-603 HV | AFNOR - NF E 48-690 | AFNOR - NF E 48-691 | CINCINNATI - MACHINE P-70 (ISO 46) | DENISON - HF-0, HF-1, HF-2 | DIN - 51524 PART 3 | EATON VICKERS - I-286-S | EATON VICKERS - M-2950-S | ISO - 11158, HV | ISO - 6743-4, HV

**Analysis data**

Test	Results		
Class-ISO	Method	Unit	H46.
Viscosity at 100°C	ASTM D445	mm <sup>2</sup> /s	7.9
Viscosity at 40°C	ASTM D445	mm <sup>2</sup> /s	46
Viscosity index	ASTM D2270		151
Viscosity at -25°C		mpa.s	3000
Straight Ash		Wt. %	0.2
Sulphated Ash		Wt. %	0.20
TAN	ASTM D664	mg koh/g	1.0
TBN;	ASTM D2896	mg koh/g	0.2
Pourpoint;	ASTM D6892	°C	-39
Specific gravity at 15/15°C	ASTM D4052	g/ml	0.870
Firepoint; COC	ASTM D92	°C	220

**Analysis data**

Test			Results							
Class-ISO	Method	Unit	H10	H15	H22	H32	H32/46	H46	H68	H100 >
Viscosity at 100°C	ASTM D445	mm <sup>2</sup> /s	2.7	3.8	4.9	6.1	7.1	7.9	10.4	15.2
Viscosity at 40°C	ASTM D445	mm <sup>2</sup> /s	10	15	22	32	40	46	68	103
Viscosity index	ASTM D2270		98	172	168	148	155	151	150	155
Viscosity at		mpa.s		-30°C 1100	-25°C 1000	-25°C 1500	-25°C	-25°C 3000	-20°C 3200	
Straight Ash		wt. %	0.2	0.2	0.2	0.2	3000	0.2	0.2	0.2
Sulphated Ash		wt. %	0.2	0.2	0.2	0.20	0.2	0.20	0.20	0.2
TAN	ASTM D664	mg KOH/g	1.0	1.0	1.0	1.0	0.20	1.0	1.0	1
TBN;	ASTM D2896	mg KOH/g	0.2	0.2	0.2	0.2	1.0	0.2	0.2	0.2
Pourpoint;	ASTM D6892	°C	-33	-60	-48	-39	0.2	-39	-33	-24
Specific gravity at 15/15°C	ASTM D4052	g/ml	0.843	0.875	0.875	0.865	-36	0.870	0.870	0.870

**Hydraulic oil H46**

**Article number** 75355-46

**Contents** 5 liter

**Article number** 75382-46

**Contents** 25 liter

**Article number** 75386-46

**Contents** 60 litres

**Article number** 75392-46

**Contents** 210 litres