

## LUBRICANTS AND RELATED PRODUCTS FOR INDUSTRIAL USE

## INA Hidraol HD

### General Description - Application

INA Hidraol HD are range of very good quality hydraulic oils, incorporating additives to improve antiwear and load-carrying properties, corrosion resistance, oxidation stability and foaming properties. Good demulsification of water and low pour points allow operation under adverse conditions. Recommended primarily as hydraulic oil in control and power transmission systems. Also suitable where very good steel-on-steel antiwear performance is required such as highly loaded vane pumps and gear boxes.

INA Hidraol HD low viscosity grades suitable for hydraulic systems especially at low ambient temperatures and fore lubrication of high speed bearings and spindles in machine tools. INA Hidraol HD medium viscosity grades suitable for hydraulic systems of machine tools, presses, cranes and other machines. Suitable for use with vane, piston and gear hydraulic pumps following manufacturers recommendations. They should not be used with silver-plated components. INA Hidraol HD high viscosity grades for lubrication of bearings and gears in steel and paper mills, chemical, processing and building industry. Prevents corrosion and assures good lubrication at elevated temperatures and loads.

### Performance Level - Specifications

ISO 6743-4 L-HM

ISO 11158 HM

DIN 51524/2 HLP

Steyr Landmaschinentechnik H ( ISO VG 46 i 68 )

INA N 22-174 TIP 1

Properties	INA Hidraol HD								Method
ISO - L - HM	22	32	46	68	100	150	220	320	ISO3448
Density at 15 °C, g/cm <sup>3</sup>	0,866	0,876	0,878	0,881	0,885	0,892	0,895	0,899	ISO 3675
Kinematic viscosity, mm <sup>2</sup> /s									
- at 0 °C	220	400	600	1400	2100	-	-	-	ISO 3104
- at 40 °C	22	32	46	68	100	150	220	320	
- at 100 °C	4,3	5,4	6,7	8,5	11,0	14,4	18,4	23,5	
Viscosity Index	100	100	100	95	94	93	92	93	ISO 2909
Flash Point, (COC), °C	180	185	220	220	230	230	240	250	ISO 2592
Pour Point, °C	-32	-30	-25	-25	-18	-15	-12	-12	ISO 3016
Corrosion (Cu, 100 °C, 3 h)	1a								ISO 2160
Rust prevention	no rust								ISO 7120/A
Water separation: - time to 3 ml emulsion at 54°C, min	15					20			ISO 6614
Foam:									
- at 24 °C , ml/ml					50/0				ISO 6247
- at 93,5 °C , ml/ml					30/0				
- at 24 °C, ml/ml					10/0				
FZG load stage fail	-	10						DIN 51354	

The above figures are typical of those obtained with normal production tolerance and do not constitute a specification.