

## Product Data Sheet

# MAK HYDROL HLP (SUPER CLEAN)

ISO VG: 22, 32, 46, 68, 100 & 150

### DESCRIPTION

These are premium grade extra heavy duty anti-wear oils with outstanding thermal stability and high FZG rating. In addition, these are super cleaned to exhibit a high level of filterability. Typical NAS level of these oils is 7.

### PERFORMANCE BENEFITS

- High thermal stability and excellent compatibility with seals
- They provide trouble-free service and have found to be far superior than other anti-wear hydraulic oils
- High oxidation stability

### APPLICATIONS

These are recommended for high pressure hydraulic systems and also for power transmission in systems operating at high speeds, loads and temperatures. These are suitable for lubrication of pumps and industrial hydraulic machinery operating under heavy loads. These are specially recommended for sophisticated high performance Electrohydraulic or Numerically Controlled systems.

### PERFORMANCE LEVEL

- 11<sup>th</sup> FLS of FZG – Niemann EP test
- IS 11656 : 1986 [Reaffirmed March, 2002]
- DIN 51 524 Part II HL P Type
- Denison HF-0 & HF-2
- Vickers 1-286-S
- US Steel 127
- Cincinnati Milacron P-70

Our grades meet above specifications for the respective viscosity grades.

Characteristics	IS 1448	Typical Figures		
		22	32	46
Appearance	--	Clear fluid	Clear fluid	Clear fluid
Density at 15° C	P:16	0.8490	0.8513	0.8561
K.V at 40° C, cSt	P:25	22.9	32.6	46.1
Viscosity Index	P:56	104	103	103
Pour Point, °C	P:10	-21	-21	-21
Flash Point, (COC), °C	P:69	200	210	244
Copper Strip Corrosion Test at 100°C for 3 hrs.	P:15	1a	1a	1a
Foaming Characteristics/Stability	P:67	Nil	Nil	Nil
a) Sequence I				
b) Sequence II				
c) Sequence III		Nil	Nil	Nil

## Product Data Sheet

Characteristics	IS 1448	Typical Figures		
		68	100	150
Appearance	--	Clear fluid	Clear fluid	Clear fluid
Density at 15° C	P:16	0.8598	0.8644	0.8705
K.V at 40° C, cSt	P:25	68.3	100.5	150.7
Viscosity Index	P:56	102	101	99
Pour Point, °C	P:10	-18	-18	-18
Flash Point, (COC), °C	P:69	248	256	260
Copper Strip Corrosion Test at 100°C for 3 hrs.	P:15	1a	1a	1a
Foaming Characteristics/Stability	P:67			
a) Sequence I		Nil	Nil	Nil
b) Sequence II		Nil	Nil	Nil
c) Sequence III		Nil	Nil	Nil

### Health and Safety

These oils are not hazardous under normal conditions of use. For further guidance appropriate Material Safety Data Sheet may be referred.

**Bharat Petroleum Corporation Ltd.**

Technical Services

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