

# Product Data Sheet

## MAK HYDROL

ISO VG: 15, 22, 32, 46, 68, 100, 150, 220, 320 & 460      Non ISO VG: 12, 37, 57, 81, 121 & 176

**DESCRIPTION**  
 These are specially designed oils for hydraulic transmission and circulating systems.

**PERFORMANCE BENEFITS**

- Exhibits good oxidation, anti-rust, anti-wear and anti-foam properties
- Have excellent compatibility with the seals

**APPLICATIONS**  
 These are recommended for hydraulic systems and a wide variety of circulation systems of industrial and automotive equipments.

**PERFORMANCE LEVEL**

- IS 3098 : 1983 [Reaffirmed Nov., 1998]
- IPSS : 1-09-022
- IS 10522 : 1983 [Reaffirmed Nov., 1998]
- Vickers V-104C Vane pump test
- DIN 51 524 Part 1 HL Type

Our grades meet above specification for the respective viscosity grades.

Characteristics	IS 1448	Typical Figures			
		12	15	22	32
Appearance	--	Clear fluid	Clear fluid	Clear fluid	Clear fluid
Density at 15° C	P:16	0.849	0.849	0.850	0.852
K.V at 40° C, cSt	P:25	12.8	15.3	22.6	32.6
Viscosity Index	P:56	103	103	102	101
Pour Point, °C	P:10	-15	-12	-12	-12
Flash Point, (COC), °C	P:69	180	186	200	220
Copper Strip Corrosion Test at 100°C for 3 hrs.	P:15	1	1	1	1
Foaming Characteristics/Stability	P:67	Nil	Nil	Nil	Nil
a) Sequence I					
b) Sequence II					
c) Sequence III		Nil	Nil	Nil	Nil

Characteristics	IS 1448	Typical Figures			
		37	46	57	68
Appearance	--	Clear fluid	Clear fluid	Clear fluid	Clear fluid
Density at 15° C	P:16	0.852	0.855	0.857	0.860
K.V at 40° C, cSt	P:25	37.3	46.7	57.2	68.1
Viscosity Index	P:56	100	100	100	99
Pour Point, °C	P:10	-12	-12	-12	-12
Flash Point, (COC), °C	P:69	224	226	234	238
Copper Strip Corrosion Test at 100°C for 3 hrs.	P:15	1	1	1	1
Foaming Characteristics/Stability	P:67	Nil	Nil	Nil	Nil
a) Sequence I					
b) Sequence II					
c) Sequence III		Nil	Nil	Nil	Nil

## Product Data Sheet

Characteristics	IS 1448	Typical Figures			
		81	100	121	150
Appearance	--	Clear fluid	Clear fluid	Clear fluid	Clear fluid
Density at 15° C	P:16	0.862	0.865	0.868	0.874
K.V at 40° C, cSt	P:25	81.4	100.2	121.2	150.5
Viscosity Index	P:56	98	96	96	95
Pour Point, °C	P:10	-12	-12	-9	-9
Flash Point, (COC), °C	P:69	246	248	252	256
Copper Strip Corrosion Test at 100°C for 3 hrs.	P:15	1	1	1	1
Foaming Characteristics/Stability	P:67	Nil	Nil	Nil	Nil
a) Sequence I					
b) Sequence II					
c) Sequence III					

Characteristics	IS 1448	Typical Figures			
		176	220	320	460
Appearance	--	Clear fluid	Clear fluid	Clear fluid	Clear fluid
Density at 15° C	P:16	0.880	0.886	0.895	0.904
K.V at 40° C, cSt	P:25	176.5	220.1	320.4	460.6
Viscosity Index	P:56	94	94	92	92
Pour Point, °C	P:10	-9	-6	-6	-6
Flash Point, (COC), °C	P:69	258	262	268	272
Copper Strip Corrosion Test at 100°C for 3 hrs.	P:15	1	1	1	1
Foaming Characteristics/Stability	P:67	Nil	Nil	Nil	Nil
a) Sequence I					
b) Sequence II					
c) Sequence III					

### Health and Safety

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

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