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TECHNICAL INFORMATION

F H - E P

Oil for Hydraulic systems, High Pressure, HLP type

DESCRIPTION

FH-EP is a name of a range of hydraulic fluids manufactured with highly refined paraffinic base oils.
The inherent characteristics of the base oils, like high resistance to oxidation, low acidity level, desemulsivity capacity, low foam formation, and so on... are reinforced by additives from the latest technology, providing moreover high Extreme Pressure and Antiwear characteristics.

It supersedes the following standards:

DIN 51524/2 HLP	DIN 51517/2 CL
ISO 6743/4 HM	ISO/TR 3498 HM
NFE 48603 HM	DENISON HF-0,HF-1,HF-2
US STEEL 136 and 127	VICKERS 35VQ25, V-104 C

CINCINATI MILACRON P-68, P-70, P-69 (respectively)

APPLICATIONS

The hydraulic fluids **FH-EP** are used in any kind of hydraulic systems where are required special **Extreme Pressure** and **Antiwear** characteristics: because of high pressure used in pumps and hydraulic motors, in industrial fields like:

- Construction and Public Works machineries.
- Tool machines of any kind,

and generally in all hydraulic systems working at high pressure and therefore requiring excellent EP and Antiwear characteristics.

Besides it can be used successfully in **gearboxes** under high load, as it supersedes the DIN 51517/2 standard for gear oils and the level 12 in the FZG test.

In its lowest viscosity grade, it is used also for lubrication of the air lines for **pneumatic tools**.

ADVANTAGES

- High resistance to foam formation.
- Excellent lubricity.
- High resistance to sludge formation.
- High filterability.
- High deaeration capacity.
- Long lasting (high resistance to ageing).
- High Viscosity Index.
- Very low wear in the expensive and delicate equipment like pumps, motors...

TECHNICAL CHARACTERISTICS

	FH - 22 EP	FH - 32 EP	FH - 46 EP	FH - 68 EP
ISO VG	22	32	46	68
Aspect	Transparent yellow liquid			
Density at 15ºC (ASTM-D-4052), gr/cc	0.865	0.875	0.875	0.885
Viscosity at 40ºC (ASTM-D-445), cSt	19.8 - 24.2	28.8 – 35.2	41.4 – 50.6	61.2–74.8
Viscosity at 100ºC (ASTM-D-445), cSt	3.9 – 4.4	5.2 - 5.6	6 - 7.5	8 - 9.5
Viscosity at 0ºC (ASTM-D-445), cSt	300	335	580	1050
Viscosity Index (ASTM-D-2270)	> 95	> 95	> 100	> 100
Acidity (ASTM-D-664), mg KOH/g	0.40 – 0.80	0.50 – 0.70		
Pour Point (ASTM-D-97), ºC	-25			
Flash point (ASTM-D-92), ºC	190	200	220	220
Desemulsivity (ASTM-D1401), (40 ml/40 ml/0 ml), min.	< 30	< 30	< 30	< 60
Foam formation (ASTM-D-892), ml/ml	10/0 max.	10/0 max.	10/0 max.	30/0 max.
Oxidation (ASTM-D-943), hours	> 2000			
Copper corrosion (ASTM-D-130)	1a			
Steel corrosion (ASTM-D-665 A and B)	Pass			
4-Ball test (1h/40kg/1200rpm), wear scar, mm	0.50			
VICKERS pump (DIN 51389 part II)	Pass			
FZG test (DIN 51534), level	12			

Note: These data are average values after different tests. Due to the great variety of working conditions, these data do not constitute a base for specifications. KRAFFT reserves the right to change the specifications without previous notice.