



HYDRO S

ZINC FREE HYDRAULIC FLUID



HYDRAULIC RANGE HM
CATEGORY ISO-L-HM
ISO GRADES 46 and 68

STANDARDS & SPECIFICATIONS
ISO 6743-4 category HM
NETSTAL grade 68
ENGEL grade 46



APPLICATIONS

- INDUSTRY** **HYDRO S** is suitable for all hydraulic systems requiring a zinc free fluid, including vane, screw or gear pumps and operating up to 350 bar pressure.
- GEARS** **HYDRO S** can also be used for lubrication of moderately loaded spur gears.

BENEFITS

- **HYDRO S** is a fluid which meets the specifications of the manufacturer NETSTAL, who requires zinc free oil, ISO grade 68, for the lubrication of its injecting plastic presses.
- **HYDRO S** meets the specifications of manufacturer of injection presses ENGEL in grade 46.
- Thanks to its high resistance to oxidation, **HYDRO S** presents the advantage of an increased long-life of the operating fluid at full length of its use.
- **HYDRO S** has a good level of filterability, even in water occurrence.
- His high extreme pressure power enables the lubrication of moderately loaded spur gears.
- His low pour point enables to lower the using temperature threshold.

PERFORMANCES

PERFORMANCE LEVELS

ISO 6743-4 Category HM
NFE 48602 Category HM

COMPLIANT WITH MANUFACTURER'S SPECIFICATIONS

NETSAL ISO grade 68
ENGEL ISO grade 46
LVD ISO grades 46 and 68

OPAL
NETSTAL
OPAL
NETSTAL
OPAL
NETSTAL



CHARACTERISTICS

CHARACTERISTICS	UNITS	METHODS	TYPICAL DATA	
ISO grade	-	-	46	68
Density at 15°C	kg/m ³	NF T 60-101	879	880
Kinematic viscosity at 40°C	mm ² /s	NF T 60-100	46,4	69,9
Kinematic viscosity at 100°C	mm ² /s	NF T 60-100	7	9
Viscosity index	-	NF T 60-136	108	103
Pour point	°C	NF T 60-105	-24	-24
Flash point	°C	NF T 60-118	221	240
Aniline point	°C	NF M 07-021	101	103
Foaming séquence I	ml	NF T 60-129	0/0	
Foaming séquence II	ml	NF T 60-129	0/0	
Foaming séquence III	ml	NF T 60-129	0/0	
Air release at 50°C	min	NF T 60-149	4	
Demulsification	ml (min)	NF T 60-125	40/40/0(8)	
Copper corrosion	grading	NF M 07-015	1a	
Rusting test	-	NF T 60-151 A/B	Pass	
Oxidation resistance	hour	NF T 60-150	2600	
Scar diameter 4-ball 40 kg/1h wear test	mm	NF E 48-617	0,4	
FZG damage load stage	-	DIN ISO 14635-1	11	
PALL-BENSCH filterability dry, filterability factor with 1 % of water, filterability factor	FF0	BENSCH	104	
	FF1	P73CC8	104	
AFNOR filterability dry, filterability factor with 0,2 % of water, filterability factor	IF1	NF E 48-690	Pass	
	IF2	NF E 48-691	Pass	

This typical data is given for information only

HEALTH, SAFETY AND ENVIRONMENT

Elimination must be carried out to conform to the rules set for the disposal of used mineral oils.

Must be stored away from bad weather.

Should you need further details, our Technical Department remains at your disposal.

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