

HFO

HYDRAULIC FLUID HIGH PERFORMANCE HM



HYDRAULIC RANGE HM
 CATEGORY ISO-L-HM
 ISO GRADE 32 TO 68

STANDARDS & SPECIFICATIONS
 DENISON HFO
 EATON BROCHURE 3-401-2010
 CINCINNATI LAMB P 68, P 69, P 70



APPLICATIONS

HFO is intended for high performance hydraulic systems and all pressures, where exhaustive filtering and high working temperatures are required.

HFO can also be used in conventional installation, machine tool gearboxes and mediumly loaded mechanical transmission systems.

BENEFITS

- Its extreme working cleanliness enables trouble-free use for servo valves and fine filters, with real economy in terms of filtering consumables.
- **HFO** has **excellent filterability**, even in the presence of water, enabling its cleanliness to be maintained by filtering during system operation.
- **HFO** is an **anti-wear extremely high pressure fluid**, enabling use in machine tool gearboxes and mediumly loaded transmission systems.
- **HFO** has **excellent thermal stability** ($T^{\circ} > 90^{\circ}\text{C}$) **and chemical stability** (bases and components). His resistances to oxidation, hydrolytic and thermal degradation of additives retards filter clogging.
- **HFO** is neutral to metals and elastomers and has a high anti-foam capability, an excellent air release and a quick demulsibility.

PERFORMANCES

APPROVAL ⁽¹⁾

DENISON HFO
 (approval number : 646 (1))

⁽¹⁾ Approval certificate available on request

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TECHNICAL DATA SHEET

PERFORMANCE LEVELS

ISO 11158 Category HM
 ISO 6743-4 Category HM
 NFE 48603 Category HM
 DIN 51524 Part 2 Category HLP

EATON BROCHURE 3-401-2010
 CINCINNATI LAMB P 68 (iso grade 32)
 CINCINNATI LAMB P 69 (iso grade 68)
 CINCINNATI LAMB P 70 (iso grade 46)
 SWEDISH STANDARD SS 15 54 34 Class A

CHARACTERISTICS

CHARACTERISTICS	UNITS	METHODS	TYPICAL DATA		
ISO grade	-	-	32	46	68
Specific gravity at 15°C	kg/m ³	NF T 60-101	870	876	880
Kinematic viscosity at 40°C	mm ² /s	NF T 60-100	32	46,9	67
Kinematic viscosity at 100°C	mm ² /s	NF T 60-100	5,5	6,9	8,6
Viscosity index	-	NF T 60-136	108	102	99
Pour point	°C	NF T 60-105	-30	-30	-24
Flash point	°C	NF T 60-118	222	230	240
Aniline point	°C	NF M 07-021	98	101	102
TAN	Mg KOH/g	ASTM D 664	0,5		
Foaming sequence I	ml	NF T 60-129	30/0		
Foaming sequence II	ml	NF T 60-129	20/0	10/0	0/0
Foaming sequence III	ml	NF T 60-129	0/0		
Air release at 50°C	min	NF T 60-149	2	3	7
Desemulsibility	ml (min)	NF T 60-125	40/40/0(20)	40/40/0(30)	40/40/0(20)
Copper corrosion	quotation	NF M 07-015	1a		
Anti rust test	-	NF T 60-151 A	Pass		
Hydrolytic stability 48h at 93°C	-	ASTM D 2619	Pass		
Oxidation resistance	hour	NF T 60-150	3100		
Thermal stability	-	CINCINNATI PROCEDURE	Pass		
Scar diameter 4-ball 40 kg/1h wear test	mm	NF E 48-617	0,4		
FZG damage load stage	-	DIN ISO 14635-1	9	9	10
Total weight loss Vickers V104C 250h	mg	DIN 51389/2	11		
AFNOR filterability dry, filterability index with 0.2 % water, filterability index	IF1	NF E 48-690	Pass		
	IF2	NF E 48-691	Pass		

This typical data is given for information only

HEALTH, SAFETY AND ENVIRONMENT

Disposal must be carried out in accordance with regulations in effect for the disposal of used mineral oils.
Must be stored away from bad weather conditions.

For further details, our Technical Department can provide assistance if necessary