Engen Hydrokin ESF 68

Energy Saving Hydraulic Fluid

Description

Engen Hydrokin ESF 68 is an ultra-high VI, “super-stabilised” anti-wear hydraulic oil designed and formulated specifically to reduce energy consumption in hydraulic oil systems, especially those found in mobile earthmoving equipment. Field trials comparing Engen Hydrokin ESF technology to other top branded products have proved direct savings in fuel consumption in excess of 10%. Overall cost savings have also exceeded 10%. Engen Hydrokin ESF 68 is specifically designed to meet the requirements of modern hydraulic systems, including those where the equipment manufacturer specifies the use of anti-wear-type hydraulic fluids. It contains a balanced selection of additives that afford multi-metal compatibility, anti-rust, anti-corrosion, anti-foam, and anti-wear protection. These are combined to maintain the good air-release and water separation properties of the highly refined base oils employed in the formulation.

Application

Engen Hydrokin ESF 68 is recommended for industrial high pressure hydraulic systems using pumps and motors of all designs on mobile and stationary equipment as well as in hydrostatic transmissions operating under the most severe conditions. The variety of possible applications includes construction, agriculture, mining and marine.

Performance Level

Denison T6C-020, AFNOR NFE 48-690/1 (Dry & Wet), AFNOR NFE 48-603, Denison HF-1, HF-2 & HF-0, Vickers I-286-S & M-2950-S (35VQ25), DIN 51524 Part 3, SABS 1218–1984.

Benefits

- Direct reduction in energy consumption in excess of 10% is possible.
- Overall cost-savings of more than 10% are possible.
- Superior wet and dry filterability with good demulsibility for rapid separation of water.
- Excellent anti-wear properties and good protection against rust and corrosion.
- Suitable for widely varying temperature conditions.
- Retains viscosity-temperature characteristics in service.
- Full multi-metal compatibility (with the exception of silver).

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Typical Physical Characteristics

No	Description	Method	UoM	Min	Target	Max	Results
Standards, Tests & Specifications – UHVI ISO VG 68							
1	Viscosity @ 100 °C	ASTM D445	cSt		Report		12.16
2	Viscosity @ 40 °C	ASTM D445	cSt	64.60		71.40	65.91
3	Viscosity Index	ASTM D2270		180			185
4	TAN	ASTM D974	mg KOH/g		Report		0.51
5	RPVOT	ASTM D2272	minutes		Report		>300
6	Water Separation – 40/40/0	ASTM D1401-02	minutes			30	25
7	Rust Test, A & B	ASTM D665			Pass		Pass
8	Copper Corrosion	ASTM D130				1B	1A
9	Foam Stability						
	Sequence I	ASTM D892-06	ml			0	0
	Sequence II	ASTM D892-06	ml			0	0
	Sequence III	ASTM D892-06	ml			0	0
10	Air Release	ASTM D3427	minutes			10	2.1
Performance Tests: Parker Hannifin, DIN 51524 (Part 3 – HVI Hydraulics), Bosch, Rexroth 90220-1[(1)]							
1	1000-hour Sludge Test	ASTM D4310					
	TAN after 1000 hours		mg KOH/g			1.0	0.12
	Insoluble Sludge		mg			100	19.5
	Total Copper		mg			200	56
Performance Tests: GM (LS-2) LH-04[(2)]							
1	TOST Test	ASTM D943					
	Hours to 2.0 NNA		hours			1500	>2000[(3)]
Performance Tests: DIN 51524 (Part 3 – HVI Hydraulics), Bosch Rexroth 90220-1							
1	Wear Test	DIN 51354-2					
	FZG A/8.3/90 – Load Stage Pass					10	11
	FZG A/8.3/90 – Load Stage Fail					10	12
Performance Tests: V-104 C Vane Pump							
1	250 hours, weight loss	IP 281[(4)]					
	Cam Ring		mg			120	13.1[(5)]
	Vane		mg			30	4.5[(5)]

Notes:
(1) Specifications based on pump manufacturer requirements and industry standards.
(2) Specifications based on pump manufacturer requirements and ISO VG 46 grade.
(3) Result obtained with Engen standard VI product using same performance additive.
(4) IP 281 test method equivalent in all aspects to CETOP RP 67H test.
(5) Result obtained with Engen standard VI product using same performance additive.

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Due to continual product research and development, the information contained herein is subject to change without notification.
Refer to the Material Safety Data Sheet (MSDS) for information on the safe handling and use of this product.