



Gulf Harmony ZF Super Clean

High performance ashless super clean anti-wear hydraulic oil

Product Description

Gulf Harmony ZF Super Clean series are high performance ashless anti-wear hydraulic oils developed to provide excellent performance in hydraulic systems operating under moderate to severe conditions requiring super clean oils. They are formulated with an advanced ashless anti-wear technology and select base oils to provide reduced environmental impact in case of an accidental release into the environment. They exhibit excellent anti-wear property, thermo-oxidative stability, foam control and water separation properties. They are available in ISO 10 through ISO 100 viscosity grades and exceed the performance requirements of global industry standards viz. DIN 51524 Part 2-HLP, AFNOR NFE 48-603-HM & ISO 11158 HM and majority of the international OEMs viz. Denison, Cincinnati Lamb & Eaton (Vickers).

Features & Benefits

- Excellent thermo-oxidative stability controls the formation of sludge & varnish and improves oil life
- Exceptional anti-wear property results in longer pump and component life and reduces costs
- Superior demulsibility helps in faster separation of water from oil and resists formation of emulsions
- Advanced ashless additive technology reduces environmental impact in case of accidental spillage
- Ensures smooth operation of hydraulic systems employing close clearance servo valves
- Special rust & corrosion inhibitors protect multi-metallurgy components even in presence of moisture
- Rapid air release property minimises chances of pump cavitation leading to trouble free operations
- Compatible with multi-metals and sealing materials commonly used in hydraulic systems

Applications

- Hydraulic systems operating under moderate to severe conditions and requiring super clean oils and also suitable for environmentally sensitive applications
- Mobile hydraulic fluid power transmission systems and general machine lubrication
- Older design hydraulic pumps containing silver or silver-plated parts

Properties mentioned above are typical only and minor variations, which do not affect the product performances, are to be expected in normal manufacturing. The above information is based on past history of the grade only and must not be construed as a guarantee of performance. Follow equipment manufacturer's recommendations for performance level and viscosity grade. The Material Safety Data Sheet for this product is available from your nearest Gulf Distributor.

Gulf Oil International

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Specifications, Approvals & Typical Properties

ISO Viscosity grades	10	15	22	32	46	68	100	
Meet the following Specifications								
DIN 51524 Part 2-HLP	X	X	X	X	X	X	X	
AFNOR NFE 48-603-HM, ISO 11158 HM	X	X	X	X	X	X	X	
Denison HF-0, HF-1, HF-2				X	X	X		
Cincinnati Lamb (formerly Cincinnati Machine)				P-68	P-70	P-69		
Eaton (Vickers) M-2950-S, I-286-S				X	X	X		
Typical Properties								
Test Parameters	ASTM Method	Typical Values						
Viscosity @ 40 °C, cSt	D 445	10.1	15.1	22.2	31.2	45.9	68.3	98.3
Viscosity Index	D 2270	97	97	98	100	100	99	97
Flash Point, °C	D 92	136	164	186	202	210	218	230
Pour Point, °C	D 97	-30	-24	-24	-24	-24	-24	-12
Density @ 15°C, Kg/l	D 1298	0.847	0.858	0.865	0.87	0.874	0.881	0.886
Rust Test	D 665A/B	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Emulsion Test 30 minutes max	D 1401	@ 54 °C	Pass	Pass	Pass	Pass	Pass	Pass
		@ 82 °C	-	-	-	-	-	-
Foam Test, foam after 10 minutes of settling for all sequences	D 892	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Turbine Oil Stability Test, hrs	D 943	2000+			3000+		2500+	2000+
FZG, fail load stage, minimum	DIN 51354 Part II	-	-	-	11	11	11	11
Cleanliness level (at filling stage)	NAS 1638	6	6	6	6	6	6	6

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