



Gulf Harmony ZF-HVI Super Clean

Premium quality, ashless, high viscosity index super clean hydraulic oil for extreme temperature ranges

Product Description

Gulf Harmony ZF-HVI Super Clean series are premium quality ashless anti-wear hydraulic oils specially developed for applications requiring super clean oils and subjected to wide range of temperature or where small viscosity change with fluctuating temperature is needed. They are formulated with high quality paraffinic base oils, a highly shear stable polymer and an advanced ash-less additive system to provide reduced environmental impact in case of an accidental spillage. These oils provide excellent protection against oxidation degradation, rust & corrosion and wear. They also possess superior foam control, water separation and rapid air release properties. They exceed the performance requirements of global industry standards viz. DIN 51524 Part 3 HVL, AFNOR NFE 48-603 (HV) & ISO 11158 HV and majority of the international OEMs viz. Poclain, Hitachi, MAG IAS LLC, Eaton & Denison

Features & Benefits

- Exceptional anti-wear property results in longer pump and component life and reduces costs
- Extremely high viscosity index assures equipment protection at cold start-up temperatures as well as at high operating temperatures
- Excellent shear stability minimises viscosity loss over time and exhibits "stay-in-grade" performance under high shear conditions
- Excellent thermo-oxidative stability controls the formation of sludge & varnish and improves oil life
- 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
- Smoother operation of hydraulic systems with 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 most sealing materials used in hydraulic systems

Applications

- Hydraulic and power transmission systems subjected to a wide range of ambient & operating temperatures and requiring super clean oils even in environmentally sensitive applications
- Critical hydraulic systems such as high accuracy numerically controlled machine tools and those employing close clearance servo valves
- Hydraulic systems of excavators, cranes and hydrostatic drives subjected to most severe outdoor operating conditions
- Hydraulic systems operating under high pressures and requiring high degree of load carrying capability and anti-wear protection

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

The information contained herein is believed to be correct at time of publication. No warranty expressed or implied is given concerning the accuracy of the information or the suitability of the products. Gulf Oil International reserves the right to modify and change its products and specifications without prior notice.

www.gulfoilltd.com



Specifications, Approvals & Typical Properties

ISO Viscosity grades	32	46	68	100	
Meet the following Specifications					
DIN 51524 Part 3 HVLP	X	X	X	X	
AFNOR NFE 48-603 (HV)	X	X	X	X	
ISO 11158 HV	X	X	X	X	
Denison HF-0, HF-1, HF-2	X	X	X		
MAG IAS LLC (formerly Cincinnati Lamb)	P-68	P-70	P-69		
Eaton (Vickers) M-2950-S	X	X	X		
Eaton (Vickers) I-286-S	X	X	X		
Poclain			X	X	
Hitachi		X			
Typical Properties					
Test Parameters	ASTM Method	Test Values			
Viscosity @ 40 °C, cSt	D 445	32.4	46.7	68.6	99.5
Viscosity Index	D 2270	145	144	147	145
Flash Point, °C	D 92	210	218	226	238
Pour Point, °C	D 97	-39	-30	-27	-24
Density @ 15°C, Kg/l	D 1298	0.870	0.874	0.881	0.886
Rust Test	D 665A/B	Pass	Pass	Pass	Pass
Emulsion Test 30 minutes max	@ 54 °C	D 1401	Pass	Pass	Pass
	@ 82 °C		-	-	Pass
Foam Test, foam after 10 minutes of settling for all sequences	D 892	Nil	Nil	Nil	Nil
Turbine Oil Stability Test, hrs	D 943	-	3000+	2500+	2000+
FZG, fail load stage, minimum	DIN 51354 Part II	-	11	11	11
Cleanliness level (at filling stage)	NAS 1638	6	6	6	6

February 2013

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

The information contained herein is believed to be correct at time of publication. No warranty expressed or implied is given concerning the accuracy of the information or the suitability of the products. Gulf Oil International reserves the right to modify and change its products and specifications without prior notice.

www.gulfoilttd.com