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PRODUCT DATA SHEET

GIBRALTAR PREMIUM QUALITY ANTI-WEAR HYDRAULIC OIL

Gibraltar Premium Quality Anti-Wear Hydraulic Oil is the trademark for a line of premium-quality hydraulic oils, designed to meet the most stringent requirements of practically all major manufacturers and users of hydraulic equipment. Gibraltar Premium Quality Anti-Wear Hydraulic Oil derives its anti-wear properties from a zinc-dialkyldithiophosphate (ZDDP) additive with good thermal and hydrolytic stability. This special additive is very effective in reducing vane and gear pump wear, making Gibraltar Premium Quality Anti-Wear Hydraulic Oil the first choice for hydraulic power transmission in systems operating at high loads, speeds, and temperatures. Its good additive stability also allows the use of Gibraltar Quality Anti-Wear Hydraulic Oil in severe service hydraulic systems employing axial and radial piston pumps.

PROPERTIES

In addition to their anti-wear property and thermal and hydrolytic stability, Gibraltar Premium Quality Anti-Wear Hydraulic Oils are characterized by low deposits formation, outstanding rust protection, good demulsibility, and low air entrainment. Our oil contains additives to resist oxidation and prevent rust corrosion. It is non-corrosive to metal alloys, except those containing silver, and are fully compatible with common seal materials. Gibraltar Premium Quality Anti-Wear Hydraulic Oil is also fortified with an anti-foam agent and a pour point depressant. With a viscosity index (VI) of about 100, they resist wide changes in viscosity throughout the commonly encountered range of operating temperatures, and their low pour points assist in providing a ready flow during cold-weather start-up.

WEAR PREVENTION

Gibraltar Premium Quality Anti-Wear Hydraulic Oil is effective in reducing rate of wear in vane, gear, and piston pumps and in other hydraulic system components where boundary lubrication exists. In ASTM test method D2882, vane-type pump is operated at 1200 rpm for 100 hours at 79 C (175 F) pump-inlet oil temperature, and 13 790 kpa (2000 psig) pressure. In this test, pump vane and ring weight loss due to wear is determined. Average weight loss with Gibraltar Premium Quality Anti-wear Hydraulic Oil is only 25 mg, compared to a weight loss of more than 1000 mg for a conventional hydraulic oil without anti-wear protection, a reduction of almost 98%.

THERMAL AND HYDROLYTIC STABILITY

Many conventional anti-wear oils containing ZDDP may partially decompose under unusually high temperature (thermal) conditions or in the presence of water (hydrolytic). The products of thermal decomposition may appear in the system as a sticky sludge which can interfere with the operation of close-tolerance components such as servo valves. Hydrolytic decomposition can produce sulfur, which may be corrosive to metals in the system. Gibraltar Premium Quality Anti-Wear Hydraulic Oil contain a special type of ZDDP with good thermal and hydrolytic stability, which makes them suitable for systems where operating conditions may tend to create these types of decomposition.

PERFORMANCE LEVEL	SUMMARY OF BENEFITS
Eaton Vickers I-286-S (Stationary), M-2950-S (mobile), 35VQ25	Excellent thermal and oxidative stability
Denison HF-1, HF-2, HF-0	
Racine Model 5, variable volume vane pump	Anti-wear protection
Cincinnati Milicron P-68, P-69 P-70	Excellent rust protection
DIN 51524, part 2 Jeffrey No. 87	Good demulsibility
Ford M-6C32 U.S. Steel 136, 127	Hydrolytic stability
B.F. Goodrich 0152	
General Motors LH-04-1, LH-06-1, LH-15-1	Superior filterability
ISO 11158 Type HM	

AVAILABILITY

Gibraltar Premium Anti-Wear Hydraulic Oil is available in ISO grades 32, 46, 68, 100, 150 in 5 gallon pails, 30 gallon drums, 55 gallon drums and bulk.

TYPICAL INSPECTIONS

ISO GRADE	32	46	68	100	150
Gravity, °API	30.9	30.5	29.6	28.4	27.2
specific @ 15.6 °C (60 °F)	0.871	0.873	0.878	.883	.888
Density, kg/m3	868.9	870.8	875.8	880.9	887.7
lb/gal	7.253	7.269	7.311	7.372	7.453
Viscosity, cSt @ 40° C	32	46	68	100	150
cSt @ 100° C	5.5	6.9	8.6	11.3	14.7
SSU @ 100° F	165	238	353	522	788
SSU @ 210° F	44.7	49.3	55.2	65	78.5
Viscosity Index	105	105	107	99	97
Pour Point, °C	-32	-29	-29	-18	-18
°F	-25	-20	-20	0	0
Flash Point, °C	213	221	235	252	282
°F	415	430	456	486	540
Color, ASTM D 1500	L0.5	L0.5	L1.0	L1.0	L1.5

Demulsibility, ASTM D-1401	40-40-0 (15 min.)
Copper Strip, 100 °C, ASTM D-130	1a
Total Acid Number, ASTM D-664	0.5
Rust Protection, ASTM D 665	
a. Distilled water	pass
b. Sea water	pass
Denison HF-O pump test	pass
Cincinnati-Milacron spec. P-75	pass
Vane pump test, ASTM D 2882	
1.5% water, mg weight loss	pass

Foam Test, ASTM D-892	
Sequence I	0/0
Sequence II	0/0
Sequence III	0/0