



VapCor Inc. Lubrication Products

HydraFlow™ EAL CERTIFIED WATER GLYCOL HYDRAULIC FLUID

DESCRIPTION

HydraFlow™ water glycol fire resistant hydraulic fluid is a premium, general purpose water glycol fire resistant hydraulic fluid which provides a safer working environment than conventional mineral or vegetable oil-based hydraulic fluids. In applications where hydraulic piping may rupture and spray hydraulic fluid onto hot surfaces, mineral oil-based fluids can ignite causing a severe hazard to ship's crew and equipment.

HydraFlow™ water glycol fire resistant hydraulic fluid contains a corrosion inhibitor which protects the system against oxidation and other corrosion effects.

HydraFlow™ is an **EAL (Environmentally Acceptable Lubricant)**

FEATURES	BENEFITS
Excellent fire resistance	Reduced risk of injury to operating/maintenance personnel and damage to equipment caused by hydraulic fluid fires.
Good anti-wear characteristics	Increased protection against premature pump and component wear. Reduced downtime and lower maintenance costs
Liquid and vapor phase corrosion inhibition	Protects system reservoir and ferrous and non-ferrous components against oxidation and corrosion. Extends equipment life, reduces downtime and maintenance costs
Inherently low pour point and excellent viscosity temperature characteristics	Excellent cold temperature properties. Wide operating temperature range
EAL Certified	Reduced environmental liability in case of spills or leaks into the water
EPA Static Sheen Test (EPA Method 1617) as listed in Appendix 1 to subpart A of 40CFR 435	Complies with EPA/Coast Guard Rules

APPLICATIONS

- Hydraulic systems where leakage could pose environmental hazard (water spill)
- Suitable for all hydraulic applications up to 5000 psi continuous running or 7000 psi intermittent
- Hydraulic systems where leakage could pose fire hazard
- Suitable for replacement of all hydraulic oils with a viscosity 32 to 68 centistokes (cSt)

USAGE GUIDELINES

HydraFlow™ water glycol fire resistant hydraulic fluid should be maintained by periodically testing for color, viscosity, water content, pH and Alkalinity Reserves

- Color and Appearance:** Discoloration of the fluid may indicate changes in the fluid parameters.
- Viscosity at 40C, cSt:** Increases in viscosity indicate water loss, decreases indicate contamination
- Water Content:** Periodic distilled water make-up is required to replace evaporation. NOTE: To ensure fire protection, water content and viscosity must be maintained at correct levels
- pH and Alkalinity Reserve:** pH drops may indicate contamination or loss of reserve alkalinity, due to ageing of the hydraulic fluid. Samples should be drawn at least annually for laboratory testing.

Physical Properties

	Method	Value	Unit
Appearance	Visual	Red	
ISO Viscosity Grade	DIN 51519	46	
Viscosity @ 40°C, cSt	ASTM D445	44.4	mm ² /s
Viscosity @ 100°C, cSt	ASTM D445	9.2	mm ² /s
Viscosity index	ASTM D2270	188	mm ² /s
Viscosity @ 20°C, cSt	ASTM D445	109	mm ² /s
Viscosity @ - 20°C, cSt	ASTM D445	1350	mm ² /s
pH @ 25°C	as is	9.5	
Reserve Alkalinity	ASTM D 1121	16.5	ml
Pour Point	ASTM D97	-57	C°
Copper Corrosion	ASTM D 130	Pass (1A)	degree
Rust Protection	ASTM D665 A&B	Pass	degree
Specific Gravity @ 20 °C / 20 °C	ASTM D-4052	1.0908	C°
Flash Point, (C.O.C.)	ASTM D92	None	C°
Four Ball Wear (55°C, 1800 rpm, 40kg load,60 min)	ASTM D4173	0.625	mm
Vane Pump Wear test (mg)(2000 psi, 150F, 100hours)	ASTM D7043	Pass <20	Mg
Piston Pump Sauer Sunstrand 90 Series (5000 psi, 150F, 314 hours)	Similar to John Deere method	Pass	no appreciable wear

EAL & EC Environmental Properties

Environmental Test	VGP Approved Test Method	Minimum Requirement	Results
Ultimately Biodegradable	OECD 301B	60 % consumption of theoretical oxygen	Pass
Freshwater Alga and Cyanobacteria, Growth Inhibition Test	OECD 201	LC50 > 100 mg/L	Pass
Daphnia sp. Acute Immobilization Test	OECD 202	LC50 > 100 mg/L	Pass
Fish, Acute Toxicity Test	OECD 203	LC50 > 100 mg/L	Pass
Bio-accumulation	OECD 107	partition coefficient in the marine environment is log KOW <3 or >7 using test	Pass
Environment Canada's Ecotoxicity Acute Lethality - Trout	OECD 203	LC50 > 100 mg/L	Pass
Static Sheen Test	EPA Method 1617	Appendix 1 to subpart A of 40CFR 435	Pass

PACKAGING

HydraFlow™ water glycol fire resistant hydraulic fluid is available in 208 liter drums

This information is believed to be accurate and refers to the laws, regulations and products at the date of issue. However, Thermal - Lube makes no express or implied representations or warranties with respect to the information contained herein. These results are based on laboratory tests performed under controlled conditions. It is the sole responsibility of our customers to determine that their use of Thermal - Lube products is safe, lawful, and technically suitable for their applications. Because of possible changes in the laws and regulations, we cannot guarantee that the status of this product will remain unchanged.

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