COOLANT CONTROL INC.

PRODUCT BULLETIN

FRH-200

Fire resistant water glycol hydraulic fluid

Description

FRH-200 is formulated with diethylene glycol and is designed to provide optimum performance in hydraulic systems where fire resistant fluids are required. Fortified with state-of-the-art additives, **FRH-200** delivers improved lubricity, shear stability, excellent corrosion protection, and the overall performance demanded by today's high-performance hydraulic systems. **FRH-200** meets the fire resistance performance requirements of Factory Mutual.

Performance Benefits

- Outstanding fire resistance properties, providing a safer work environment
- Superior corrosion protection, extending equipment life
- Excellent shear stability and anti-wear protection, helping to reduce downtime
- High viscosity index, low pour point, and excellent heat transfer and antifoam performance
- Minimum pump and valve wear when used in accordance with OEM recommendations
- High viscosity for a wide-range of applications and reduced inventory costs
- Storage stability for easy handling in the warehouse and reduced waste
- Compatibility with other quality fire resistant water-glycols, permitting top-off to begin immediately

Recommended Applications

FRH-200 is recommended in systems operating with Eaton/Vickers, Parker/Denison, Rexroth as well as other piston & vane pumps.

Characteristics

	uom	Test Method	Results
Color	-	Visual	Red
Appearance	-	Visual	Clear and free of sediment
Viscosity @ 40°C	cSt	ASTM D44	40.6
Viscosity Index	-		150
Flash Point, COC	°C/°F	ASTM D92	None
Auto-ignition Temperature (After water boils away)	°C/°F		
Pour Point	°C/°F	ASTM D97	-47/-53
pH	-	ASTM D1287	9.5
Specific Gravity	-	ASTM D1298	1.085
Hydraulic Pump Wear Test	Run at 150°F for 100 hours at 2,000psi	ASTM D7043	Average weight loss from 3 runs: 12.3 mg

Subject to usual manufacturing tolerances

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Flammability Properties	Wear Protection
FRH-200 is classified as a less hazardous hydraulic fluid. The fluid exhibits no flash or fire point. In an extreme heat situation for a prolonged period of time, water can boil out of the fluid. See *Auto-Ignition Temperature* under *TypicalProperties.*	FRH-200 is designed to pass the ASTM D2882, 2000 psi pump test using a Vickers V 104C pump. These fluids meet the U.S. Steel requirement #171 for 2000 psi fluids. Many years of service can be expected under typical operating conditions using FRH-200.
Corrosion Protection	**Compatible Paints**
FRH-200 is well inhibited against liquid phase corrosion of iron, steel, and copper alloys. In addition, it has a very effective vapor phase rust inhibitor to prevent corrosion of reservoirs and components above the liquid level. However, systems utilizing solder, tin, lead, zinc, magnesium or cadmium should not use water-glycol fluids since such fluids may be corrosive to these metals.	Water-glycol fluids are not compatible with most paints, enamels or varnishes. Prior to fluid installation the insides of reservoirs and accumulators should be stripped of paints, unless the paints are known to be compatible with water-glycol fluids. The following companies represent a partial list of those who manufacture compatible paints: Rust-Oleum Corporation - Evanston, IL The Glidden Company - Cleveland, OH Pittsburgh Plate Glass Company - Pittsburgh, PA Coast Paint & Lacquer Division - Houston, TX Sherwin-Williams Company - Cleveland, OH Steelcoat Manufacturing Company - St. Louis, MO
Packing Compatibility	**Compatibility With Other Hydraulic Fluids**
Experience indicates nitrile (Buna-N) and neoprene seals and packings, normally used for petroleum oils are satisfactory for use with FRH-200. Silicone, butyl, and ethylene-propylene are also suitable materials. Do not use asbestos, leather or cork impregnated materials.	FRH-200 is compatible with all known major brands of hydraulic fluids, in any proportion. They are not compatible with other types of hydraulic fluids such as mineral oil, water-oil emulsions or synthetic phosphate esters, and should not be mixed with these products.
Compatible Pipe Joint Compounds	**Viscosity Index**
If a system has been assembled with any good grade pipe joint compound, it will operate satisfactorily with FRH-200 hydraulic fluid. New installations or pipes replaced during maintenance operations should be sealed with Teflon ribbon (available from any hydraulic fitting supply house).	FRH-200 provides excellent efficiency through an exceptionally high viscosity index which is stable under the high shearing stresses of hydraulic systems.
Storage Stability	**Shear Stability**
FRH-200 will withstand long periods of storage under varying temperatures. Freezing and thawing has no ill effects on the properties of this fluid.	Since viscosity of a hydraulic fluid is of utmost importance in determining the pump volumetric efficiency, it is essential that the fluid have a high resistance to shear. Some fire-resistant fluids decrease in viscosity as a result of the shearing action of pumps and valves under continuous use. FRH-200 does not shear under these conditions.