



# FRG HYDRAULIC FLUID

## (Fire Resistant Glycol-Water Hydraulic Fluid)

**FRG HYDRAULIC FLUID** is a premium water glycol type fire resistant hydraulic fluid designed to provide optimal performance and durability for hydraulic systems where safety concerns demand the unique properties of these fluids.

**FRG HYDRAULIC FLUID** is formulated as a phenol-free fluid with excellent lubricity, shear stability, antiwear, rust protection and defoamants. It provides low wear on the Vickers vane pump test (ASTM D-2882).

**FRG HYDRAULIC FLUID** resists freezing (-55 F). Its exceptional low temperature fluidity provides applications not normally possible with mineral oil products of comparable viscosity grades. This product provides excellent corrosion resistance to bronze, copper and steel metallurgy and it exhibits superior antifoam properties.

**FRG HYDRAULIC FLUID** *is incompatible* with petroleum oil. Care should be taken to make sure the two are not mixed. Contact your representative for details on converting from a mineral oil hydraulic fluid to FRG Hydraulic Fluid.

**FRG HYDRAULIC FLUID** may not be compatible with polyurethane and silicone seals. Cork shaft seals should be replaced with Buna N or other synthetic rubber. Leather packings should be avoided. Zinc or cadmium plated components should not be used. **FRG Hydraulic Fluid** is compatible with most kinds of pumps including vane, piston and gear type units.

### APPLICATIONS:

**FRG HYDRAULIC FLUID** is recommended for die casters, power transmission plants, foundries, mines, steel and aluminum mills.

**FRG HYDRAULIC FLUID** meets factory mutual test requirements for water glycol fire resistant fluids. Operating system temperatures should not exceed 175F.

**FRG HYDRAULIC FLUID** is recommended for applications calling for a water-glycol hydraulic fluid such as: Denison HF-4, Factory Mutual Group 1, US Steel 171, or Ford M6C1C.

**FRG HYDRAULIC FLUID** *is not* recommended for use as a conventional antifreeze coolant.

### BENEFITS:

- SUPERIOR FIRE RESISTANCE
- COMPATIBLE WITH OTHER WATER-GLYCOL FLUIDS
- EXCELLENT LUBRICITY & CORROSION PROTECTION
- EXCELLENT LOW TEMPERATURE FLOWABILITY
- DYED RED FOR EASY IDENTITY

### CARE AND MAINTENANCE

Operation of fire resistance water glycol fluids requires periodic monitoring and maintenance to maximize corrosion performance. The percent water level and alkalinity needs routine checks to eliminate problems with fire resistance, viscosity variations or rust. Water content can be determined with the use of a refractometer or the Karl Fisher titration procedure. Alkalinity testing should be determined by titration.

Contact your representative for details on our service maintenance program for this product.

Recommendations on water and morpholine additions are shown below.



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### TYPICAL CHARACTERISTICS

Product Code	15370
Appearance	Clear red liquid
ISO Viscosity Grade	46
Specific Gravity (ASTM D-1298)	1.09
Density, lb/gal	9.03
Viscosity (ASTM D-445): SUS @ 100°F	200
Freezing Point, °F, (°C)	-55 (-48)
Percent water	40
Flash and Fire Point	Fire resistant, contains water
pH	9.6
ISO particulate	16/12
Reserve alkalinity*	210

\* Titration to pH 5.5 with 0.5 HCl.

The above data is subject to usual manufacturing variation. For more information and availability, call 1-800-442-LUBE.  
6/1101

### RECOMMENDED ADDITIONS FOR FRG HYDRAULIC FLUID

Viscosity Range, SUS @ 100 F	<u>Fluid to be Added</u>	<b>Gallons to be added per 100 gallons fluid</b>
140-160	Concentrate	10
160-180	Concentrate	5
180-220	none	0
220-300	Water	5
300-350	Water	10
350-410	Water	15

<u>Reserve Alkalinity</u>	<b>Quarts of morpholine to be added per 100 gallons of fluid</b>
150-210	0
125-150	1
100-125	2
75-100	3
<75**	4

\*\* Samples showing an alkalinity below 75 should be evaluated for acidic contamination.