

Product Bulletin

Fyrquel® EHC Plus Electro-Hydraulic Control Fluid

OVERVIEW

Fyrquel® EHC Plus Electro-Hydraulic Control Fluid is a phosphate ester based fire-resistant fluid, and is the latest introduction to the Fyrquel® EH Series. This next generation product features the same superior self extinguishing fire properties exhibited from earlier generation Fyrquel® fluids, while providing added performance and sustainability benefits. These fluids are in the ISO HFDR class of “non aqueous hydraulic fluids” and also referred to as “synthetic fire resistant fluids”. Fyrquel® fluids are both extremely difficult to ignite and inherently self extinguishing. Other type synthetic fluids are not self extinguishing. Critical equipment should use self extinguishing fluids to get the highest level of protection from leaking fluid fires. Please visit www.fyrquel.com or www.icl-ip.com and go to the Functional Fluids business unit icon to see a comparison of non-aqueous fire resistant fluid types.

Fyrquel® fluids offer:

- Highest fire resistance
- Inherent self extinguishing property
- High oxidative and thermal stability
- Good hydrolytic stability
- Excellent lubrication properties
- Rated readily biodegradable
- Not classified or transport regulated under GHS.

FYRQUEL® EHC PLUS OEM APPROVALS

Fyrquel® EHC Plus meets or exceeds GE, Westinghouse, Alstom/ABB, Siemens and most other EHC equipment OEMs. For further information please contact your Fyrquel® Representative.

FYRQUEL® EHC PLUS NEXT GENERATION FLUID ADVANTAGES

- Improved air entrainment.
- Superior oxidative stability in high temperature services.
- Lowest fluid acidity.
- Higher fluid resistivity.
- Made from more sustainable materials, not classified under United Nations GHS hazard classification.
- Fully interchangeable and mixable with prior generation Fyrquel® EH fluids.
- Switching to this improved modern fluid is as simple as reservoir top off.
- Continues to provide STG operators with the required self-extinguishing phosphate ester fire resistance.

PRODUCT MIXING

Fyrquel® EHC Plus is fully mixable and interchangeable with prior generation Fyrquel® EH products and may be mixed or topped off in the same reservoir.

MAINTENANCE & HANDLING

Fyrquel® products are easily maintained in near original condition using standard off line chemical filtration. The Fyr-Check® Fluid Analysis service is available on request along with other service assists from experienced technical representatives. The new generation fluid products feature equal or better stability for continued long service life. Refer to Material Data Sheets (MSDS) for additional information, storage, handling, and transport guidelines. A review of the MSDS demonstrates that Fyrquel® products have similar profiles as conventional lubricants.

FYRQUEL® EHC PLUS ELECTRO-HYDRAULIC CONTROL FLUID

TYPICAL PROPERTIES

Appearance	clear, transparent liquid
Viscosity	
at 37.8°C (100°F) cST (SUS)	47 (220)
at 98.9°C (210°F) cST (SUS)	5 (43)
ISO Grade	46
Viscosity Index	0
Specific Gravity @ 60/60° F	1.145
Pour Point , °C (°F)	-18 (0)
Water Content, wt. %	0.10 max
Chlorine Content, ppm (micro coulometry)	20
Acid Number, mg KOH/g	0.05
Foaming, (ASTM D-892-72), mL.	10
Color, ASTM	1.5
Particle Distribution (SAE A-6D, tentative)	ISO 15/12 Class 3
Resistivity (OHM/cm)	20.0 x 10 ⁹ min
Air Entrainment, Minutes,	<3 minutes

Typical Properties are not sales specifications. Sales specifications are available upon request. The Certificate of Analysis will confirm actual values at time of shipment.

ENGINEERING DESIGN DATA

Evaporation Loss, wt. % (22 hrs @ 300° F)	1.50
Coefficient of Thermal Expansion @ 100° F (MI/MI/°F)	0.0003
Surface Tension (dynes/cm) @ 68° F	42
Heat of Combustion (btu/lb)	13,459
Specific Heat (cal/g °C)	
0°C	0.3523
38°C	0.3762
100°C	0.4101
Thermal Conductivity (cal-cm/sec/cm ³ /°C)	
40°C	3.04 x 10 ⁻⁴
94 °C	3.04 x 10 ⁻⁴
146 °C	2.95 x 10 ⁻⁴
Latent Heat	24.7 kcal/mole 60.3 cal/g 108.8 BTU/lb.
Vapor Pressure (mm Hg ABS)	
420 °F	0.08 mm Hg ABS
430 °F	0.50 mm Hg ABS
450 °F	1.20 mm Hg ABS

LUBRICITY DATA

Shell 4-Ball Test

1 kg. load, Scar dia. mm., avg. 0.19
 10 kg. load, Scar dia. mm., avg. 0.38
 40 kg. load, Scar dia. mm., avg. 0.48

V-104C Vickers Vane Pump Test (ASTM D-2882)

Ring Wear, grs. cumulative

24 hours 0.0037
 100 hours 0.0043

Vane Wear, grs. cumulative

24 hours 0.0030
 100 hours 0.0085

“FALEX” Lubrication Test (ASTM D-2625)
 Wear Test (ASTM-D-2670) 0.0105 scar width, in.

Extreme Pressure Test (ASTM D-2625)

Transition Load 1,500 lbs.
 Transition Pressure 101,000 psi.

“TIMKEN” Lubrication Test (ASTM D-2714)
 Wear Test 1.25 scar width, mm

Extreme Pressure Test

O.K. Load 55 lbs.
 Pressure at O.K. Load 26,250 psi

SAFETY & HANDLING

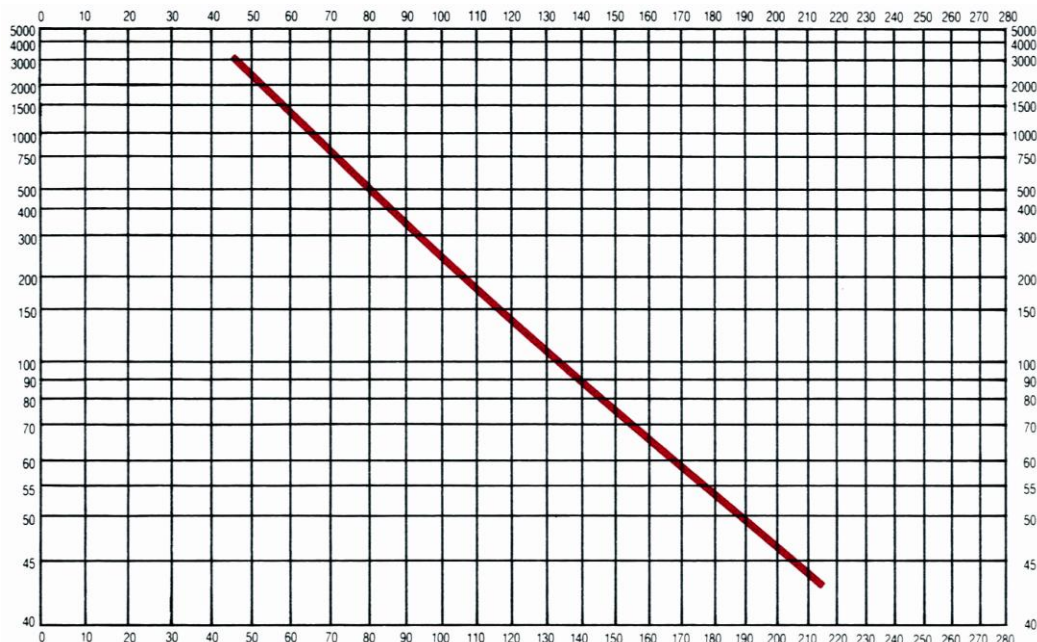
Consult the Material Safety Data Sheet for these products.

SHIPPING INFORMATION

Available 55 gallon/208 liter drums.

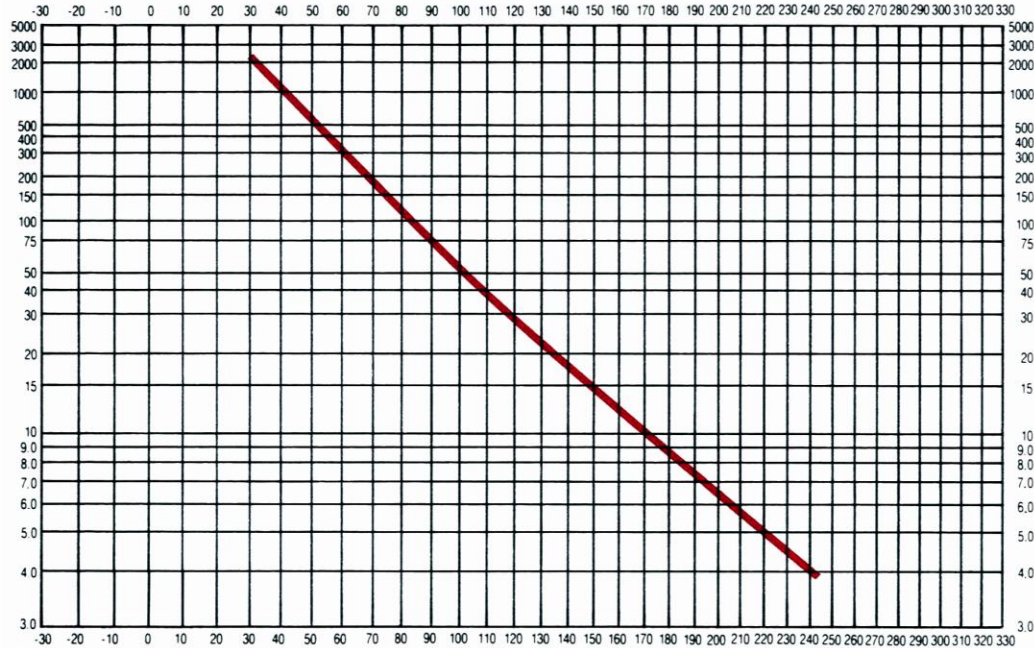
Temperature, Degrees Fahrenheit

Viscosity, Saybolt
 Universal Seconds



Temperature, Degrees Fahrenheit

**Kinematic
Viscosity,
Centistokes**



For more information about our products and to place an order, please contact your nearest ICL-IP regional sales office:

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