

# Product Bulletin



## Fyrquel® Fire-Resistant Hydraulic Fluids



### Overview

Fyrquel® fire-resistant hydraulic fluids are synthetic pure phosphate ester fluids used in:

- Steel and aluminum furnace hydraulics;
- Die cast hydraulics;
- Reciprocating air compressors; and
- Hydraulics.

Fyrquel® fluids are formulated with synthetic butylated triphenyl phosphates to provide:

- Self extinguishing fire-resistant properties;
- Superior oxidation and thermal stability;
- Good hydrolytic stability;
- Excellent lubrication properties; and
- Biodegradable fluids.

Fyrquel® fluids are self extinguishing, non-aqueous hydraulic fluids that do not support their own combustion. This self extinguishing property exceeds the limits established for “Less Hazardous Hydraulic Fluids” and incorporates phosphate esters’ unique true self extinguishing property easily proven by simple flame and wick tests. Fyrquel® fire-resistant fluids reduce the risk of catastrophic fires.

### Safety & Handling

Consult the Material Safety Data Sheet for these products.

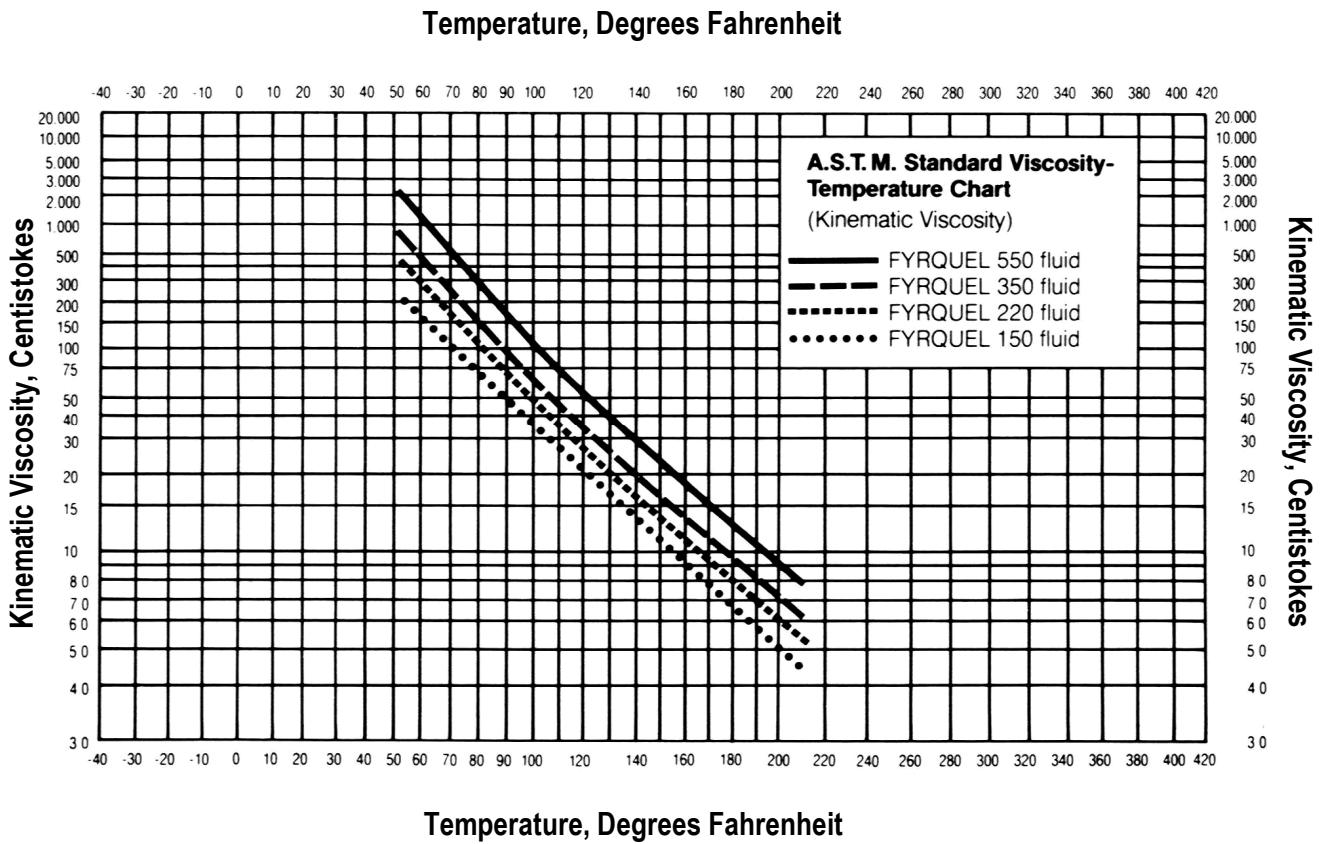
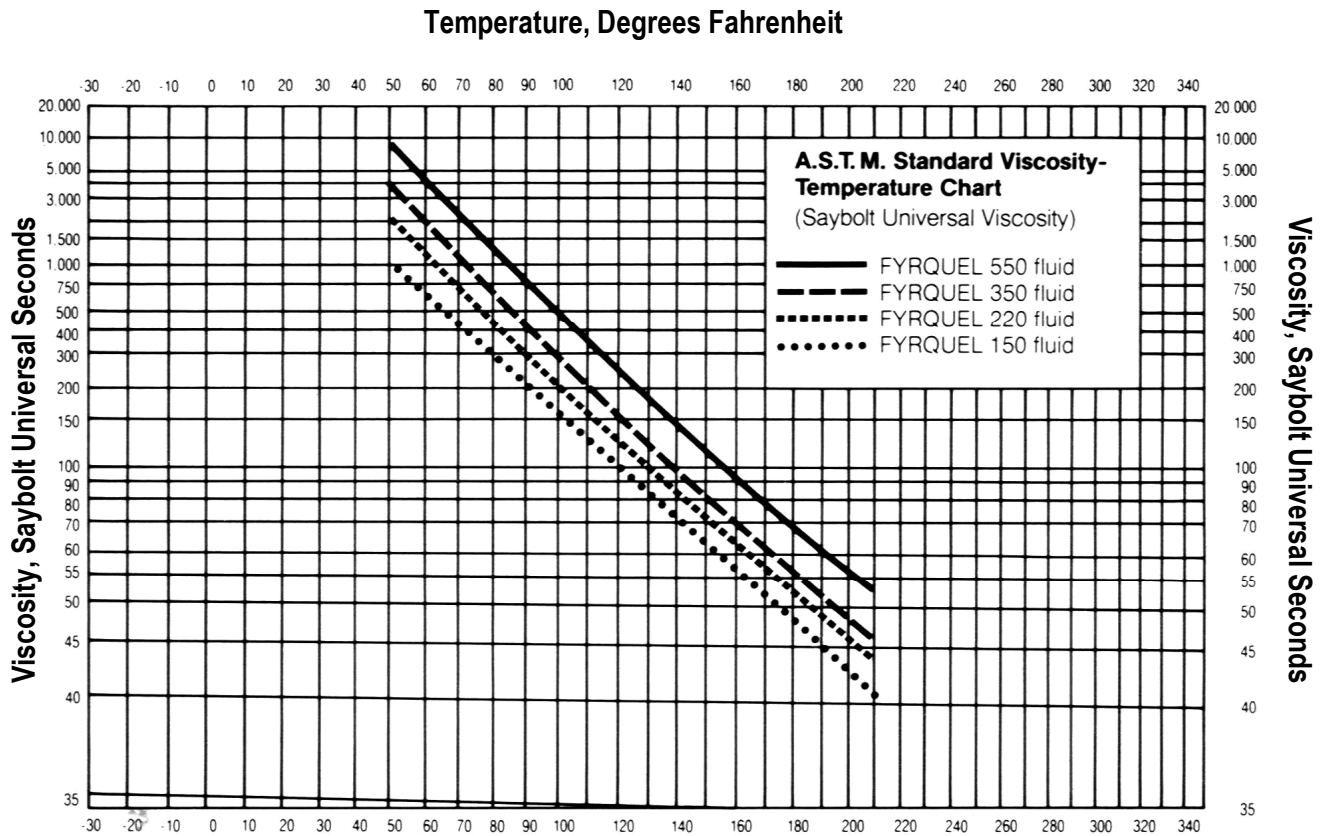
### Shipping Information

Available in bulk tank trucks, 55 gallon drums, or 5 gallon pails.

### Superior Fire Properties

	Fyrquel®	PAO	Polyol Ester	Mineral Oil
Flash Point, °F	475	455	595	420
Fire Point, °F	675	530	675	465
Autoignition Temperature, °F	1050	730	775	600
Heat of Combustion, kBTU/lb	13.3	17.2	17.1	17.3
Burning after Heat Source Removal	No	Yes	Yes	Yes

# Viscosity vs. Temperature



# Typical Properties

## Typical Physical Properties



	Fyrquel <sup>®</sup> 150	Fyrquel <sup>®</sup> 220	Fyrquel <sup>®</sup> 300	Fyrquel <sup>®</sup> 550
Appearance	clear, amber liquid	clear, amber liquid	clear, amber liquid	clear, amber liquid
Viscosity, SUS @100°F	153	219	302	545
ISO Grade	32	46	68	100
Viscosity Index	+25	+25	+25	+25
Specific Gravity @ 60/60°F	1.166	1.150	1.151	1.155
Weight (lb/gal) @ 60/60°F	9.71	9.58	9.59	9.62
Pour Point (°F)	-10	0	5	20
Boiling Point (°F @ 760 mmHG)	755	781	795	815
Water Content (% by weight)	0.05	0.05	0.05	0.05
Acid Number (mg KOH/g)	0.03	0.03	0.03	0.03
ASTM Rust Test, Procedure A	pass	pass	pass	pass

## Engineering Design Data

Evaporation Loss, wt. % (22 hrs @ 300°F)	1.50	1.50	1.50	1.50
Coefficient of Thermal Expansion @ 100°F (ml/ml/°F)	0.0003	0.0003	0.0003	0.0003
Thermal Conductivity @ 77°F (btu/hr/ft <sup>2</sup> /°F/ft)	0.0721	0.0706	0.0721	0.0715
Surface Tension (dynes/cm) @ 68°F	42	42	43	41
Refractive Index @ 68°F	1.555	1.551	1.554	1.555
Heat of Combustion (btu/lb)	13,367	13,459	13,757	13,825
Specific Heat (btu/lb/°F)				
@ 100°F	0.376	0.376	0.381	0.386
@ 300°F	0.441	0.442	0.444	0.461

## Lubricity Data

Shell 4-Ball Test				
1 kg load, Scar dia. mm, avg.	0.25	0.20	0.21	0.16
40 kg load, Scar dia. mm, avg.	0.62	0.54	0.56	0.53

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

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