

# Product Bulletin



## Fyrquel® GT Gas Turbine Bearing Lubricant



### Overview

Fyrquel® GT is a premium ISO 32 viscosity grade fire-resistant synthetic phosphate ester turbine lubricant used in:

- Large frame industrial gas turbine bearing lubrication;
- Centrifugal compressor bearing lubrication;
- Steam isolation valves; and
- Plant hydraulics.

Fyrquel® GT is 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.

### Maintenance & Handling

Fyrquel® products are easily maintained in like new, clean condition using standard off line chemical filtration and the GT-CHECK® Routine Fluid Analysis service available on request, along with other service assists from experienced field representatives. The new generation fluid products feature equal or better stability for continued long service life. Refer to Material Safety Data Sheets (MSDS) for additional information, storage, handling, and transport guidelines. A review of the MSDS will show Fyrquel® products with a low degree of hazard when used as intended.

### Safety & Handling

Consult the Material Safety Data Sheet for these products.

### Shipping Information

Available in 55 gallon drums and 5 gallon pails.

### Typical Fire Properties

	Fyrquel® GT	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

# Fyrquel® GT Gas Turbine Bearing Lubricant

## Typical Properties

ISO Viscosity Grade	32
Viscosity, SUS @ 100°F	168
Acidity, mgKOH/g	0.05
Moisture, wt % K-F	0.03
Viscosity Index	20
Pour Point, °F	-18
ASTM Rust Test, D-665 A	Pass
Color, ASTM	1.5

## Typical Physical Properties

Appearance	clear, transparent liquid
Viscosity, SUS @ 100°F	168
ISO Grade	32
Viscosity Index	+20
Specific Gravity @ 60/60°F	1.160
Weight (lb/gal) 60/60°F	9.70
Pour Point, (°F)	-15
Boiling Point (°F @ 760 mmHG)	755
Water Content, wt. %	0.10 max
Acid Number, mg KOH/g	0.03
ASTM Rust Test, Procedure A	Pass

## Engineering Design Data

Evaporation Loss, wt. % (22 hrs @ 300°F)	1.50
Coefficient of Thermal Expansion @ 100°F (ml/ml/°F)	0.0003
Thermal Conductivity @ 77°F (btu/hr/ft <sup>2</sup> /°F/ft)	0.0721
Surface Tension (dynes/cm) @ 68°F	42

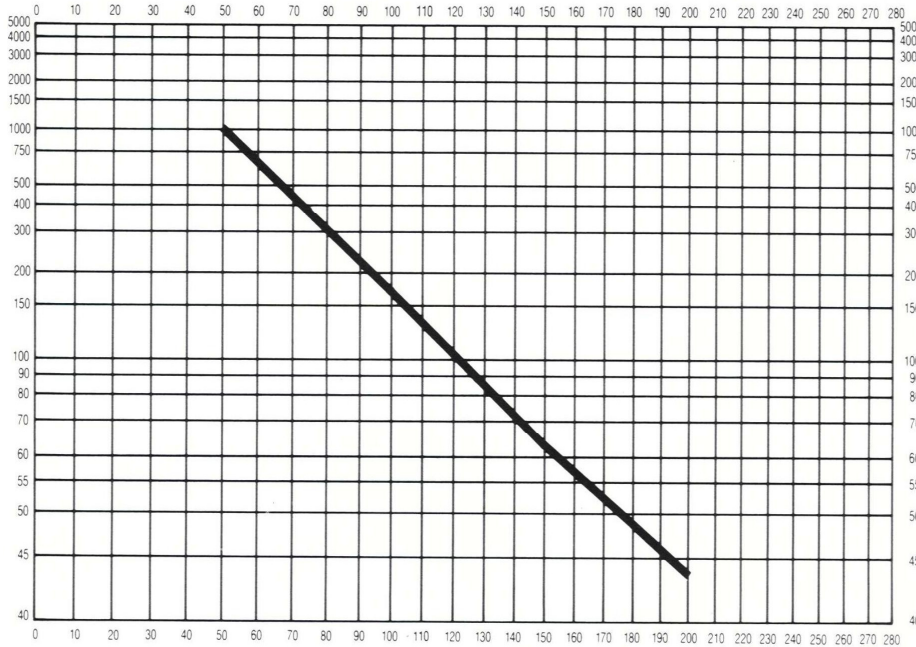
Refractive Index @ 68°F	1.555
Heat of Combustion (btu/lb)	13,466
Specific Heat (btu/lb/°F)	
@ 100°F	0.376
@ 300°F	0.469
	24.7 kcal/mole

## 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
Viscosity, SUS @ 100°F	
Initial	158
24 hours	160
100 hours	161
Total Acid Number, mg KOH/g	
Initial	0.03
24 hours	0.06

### Temperature, Degrees Fahrenheit

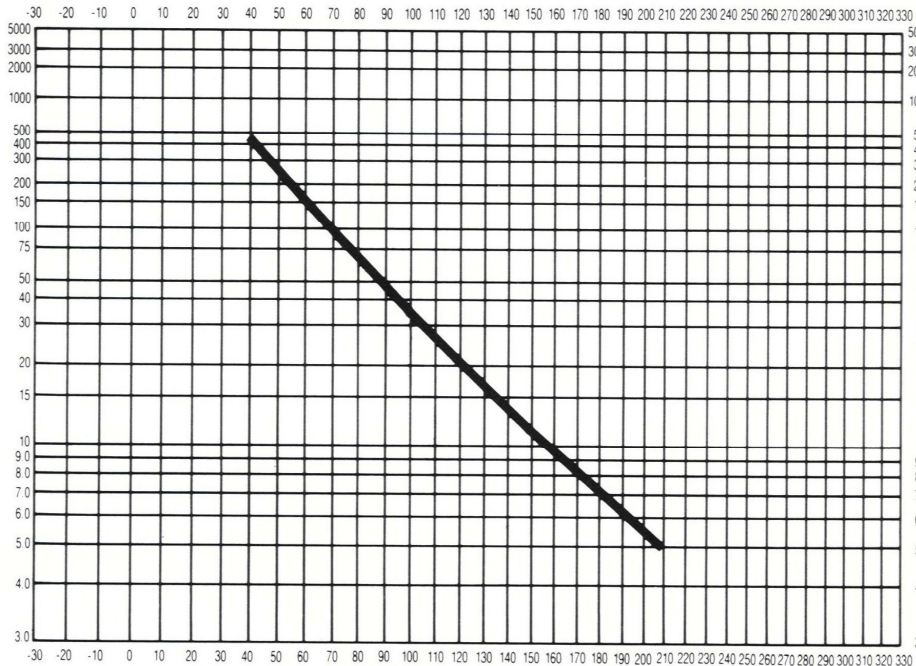
Viscosity, Saybolt Universal Seconds



Viscosity, Saybolt Universal Seconds

### Temperature, Degrees Fahrenheit

Kinematic Viscosity, Centistokes



Kinematic Viscosity, Centistokes

### Temperature, Degrees Fahrenheit

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

**AMERICAS REGIONAL SALES OFFICE**

ICL Supresta Inc.  
622 Emerson Road, Suite 500  
St. Louis, Missouri 63141-6742 USA  
Tel: 800-666-1200  
Fax: 314-983-7607

**ASIA PACIFIC REGIONAL SALES OFFICE**

ICL China  
93 Huai Hai Zhong Road #905-909  
Shanghai 200021, China  
Tax: 021-53863336  
Fax: 021-53863336

**EUROPEAN REGIONAL SALES OFFICE**

ICL-IP Europe BV  
Fosfaatweg 48 1013 BM Amsterdam  
P.O. Box 465 1000 AL Amsterdam, Netherlands  
Tel: (31) 20 800 5800  
Fax: (31) 20 800 5805

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions as to the merchantability or fitness of the product for any particular purpose, or that any suggested use will not infringe any patent. Nothing herein shall be construed as granting or extending any license under any patent. Buyer must determine for itself, by preliminary tests or otherwise, the suitability of this product for its purposes, including mixing this product with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered.