### **Product Information**

# Pyroshield<sup>®</sup> Syn Open Gear Grease (5182, 5180 & 5100)



### Heavy-Duty Synthetic Grease Provides Extreme Protection

Pyroshield Syn Open Gear Grease is a heavy-duty synthetic lubricant developed for large unshrouded open gears in the mining, mineral processing and cement industries, and for other severe service applications that require a lubricant with superior wear protection, exceptional load-carrying ability, outstanding tackiness and ease of application at various temperatures. It also works well for applications in which gears experience high point-of-contact temperatures of 327°C (620°F) and above.

A product of advanced lubricant technology providing boundary lubrication, unmatched performance and versatility, Pyroshield Syn Open Gear Grease is formulated with high-viscosity 100 percent synthetic base oil, a non-melting thickening system and LE's proprietary heat stable additives. It contains a synergistic mix of Almasol®, LE's exclusive wear-reducing additive, and a unique combination of extreme pressure additives.



### **Beneficial Qualities**

- Increases uptime
- Lengthens equipment life
- Lowers lubricant consumption
- Reduces maintenance

#### **Superior Performance**

- Outperforms similar products in wear protection and load-carrying ability (see test results on pages 2 and 3)
- Carries 90-lb Timken OK load
- Resists shock loading
- Provides excellent oxidation resistance and rust protection
- Reduces noise in large open gears

#### **Outstanding Tackiness**

- Clings tenaciously to surfaces
- Resists removal by water, heat and other severe conditions

### Wide Temperature Range

- Does not thin or run at high temperatures
- Has no dropping point (will not melt)
- 5180 remains pumpable at low temperatures

### **Versatility**

- Works for open gears and heavily loaded sliding applications
- Comes in grades 0 and 2 to meet the needs of manual and automatic systems
- Also available in aerosol

#### **Available Grades**

- NLGI 2 applied, 2 in use (5182)
- NLGI 0 applied, 2 in use (5180)
- Aerosol as applied, 2 in use (5100)

### **Proprietary Additive**

LE's proprietary additives are used exclusively in LE lubricants. Pyroshield Syn Open Gear Grease contains Almasol.

Almasol® solid wear-reducing additive is able to withstand extremely heavy loads, chemical attack and temperatures up to 1,900°F (1,038°C). It is attracted to metal surfaces, forming a microscopic layer but not building on itself or affecting clearances. Almasol minimizes metal-to-metal contact and the resulting friction, heat and wear.

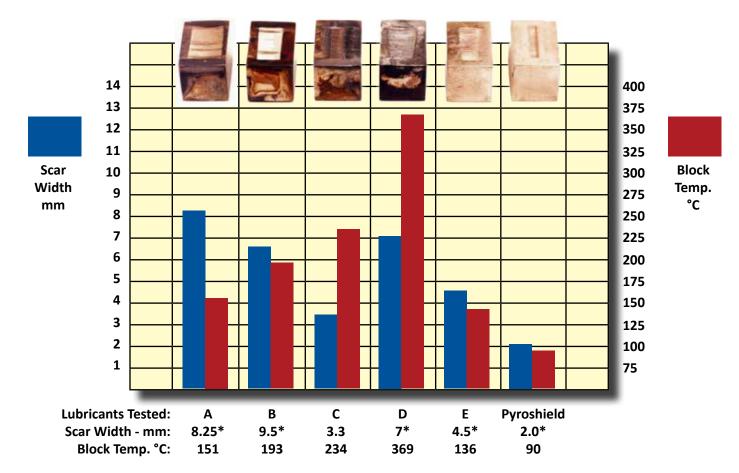




### **LE Modified Timken Test**

Specimens: Aluminum-Bronze Block (Alloy No. 61300), 32-rms micro inch steel race

Conditions: 20-lb lever arm load, 800 rpm, 2 hour, 1 lb of lubricant



<sup>\*</sup>Value is an average of widest and narrowest widths for scars that are not parallel to the block edge.

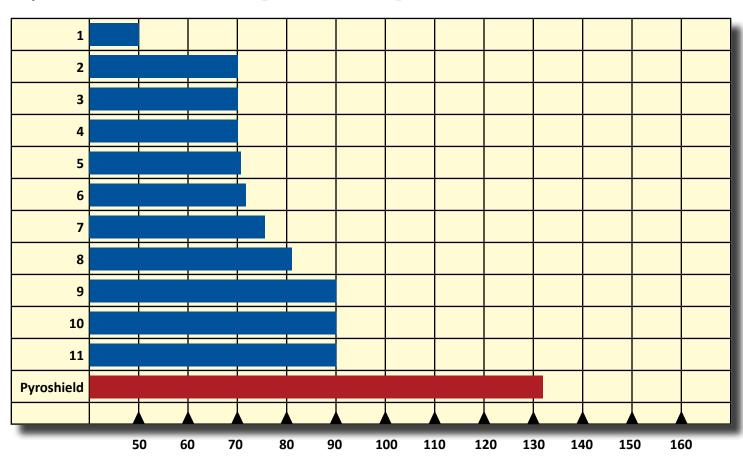
### **Conclusion**

The results of the comparative product testing demonstrate the outstanding load-carrying capacity of Pyroshield Syn Open Gear Grease. It outperformed every competitive product that was tested. Pyroshield had a narrower wear scar and a lower block temperature than all the other lubricants. The test blocks of the competitive products experienced higher temperatures as a result of friction due to poor lubrication. The difference is easily visible in the amount of discoloration of the test blocks.

## **Comparative Testing**



### **Pyroshield vs Competitive Open Gear Lubricants LWI**



### **Conclusion**

The graph above clearly shows the outstanding preventive wear performance that Pyroshield Syn Open Gear Grease provides as compared to competitive products. Load Wear Index (LWI) is a measure of lubricant's ability to carry a load and minimize wear. The higher the value, the better the lubricant does in preventing wear.









### **Pyroshield® Syn Open Gear Grease**

	<u>5182*</u>	<u>5180</u>
Thickener Type	Bentone	Bentone
Texture	Smooth/Tacky	Smooth/Tacky
Color	Purple	Purple
NLGI Grade as applied	2	0
NLGI Grade in service	2	2
Worked 60 Penetration ASTM D217	275	365
Worked 10K Penetration ASTM D217	+14	+14
Worked 100K Penetration ASTM D217	+28	+28
Dropping Point °C (°F), ASTM D2265	Non-melt	Non-melt
Base Fluid Characteristics		
Flash Point °C (°F), ASTM D92	224 (435)	110 (230)
Viscosity @ 100°C, cSt, ASTM D445	690	690 (in service)
Viscosity @ 40°C, cSt, ASTM D445	26,180	26,180 (in service)
Pour Point °C (°F), ASTM D97	3 (37)	3 (37)
Oxidation drop in psi @ 100 hrs, ASTM D942	3	3
Corrosion Prevention DI H20, ASTM D1743	Pass	Pass
Timken OK Load lbs, ASTM D2509	90	90
Four-Ball EP Weld Point kgf, ASTM D2596	500	620
Four-Ball EP Load Wear Index kgf, ASTM D2596	116	136
Four-Ball Wear @ 75°C(167°F), 1200 rpm, 40 kgf, 60 minutes, mm wear, ASTM D2266	0.71	0.71
Water Spray-off % loss, ASTM D4049	<2.0	<2.0
Copper Corrosion 24 hrs @ 100°C, ASTM D4048	1b	1b

<sup>\*</sup> An aerosol version of Pyroshield 5182 – Pyroshield 5100 – will have the same physical characteristics as 5182 once in service. The convenient spray cans, which contain no chlorofluorocarbons, are ideal for use with open gears, chains and slides.

#### Recommendations

 For best results when switching to Pyroshield Syn Open Gear Grease, first clean the area of application with LE's Duolec® Industrial Gear Oil (1609).

### Using Pyroshield 5100 & 5180

- Use adequate ventilation if used indoors. These lubricants contain a safe, non-chlorinated solvent for improved pumpability and ease of application at low temperatures.
- After application, the solvent evaporates. The resulting lubricant is an NLGI grade 2 grease.
- 5180 should not be further diluted with solvent, even if partial evaporation has occurred, as the functional characteristics could be altered.

### **Performance Requirements Met or Exceeded**

• 5180: Metso Mineral Grinding

### **Typical Applications**

- Various applications in the mining and mineral processing industry
- Open gears and slides
- Ball mill open gears
- Kiln open gears
- Bar screens
- Dipper sticks
- · Circle rails



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