



# BULLETIN

Date	Bulletin
2/5/2013	139

Item	Description	Qty	Rate	Total
LE 5180-0050TBS	LE 5180 PYROSHIELD NLGI 0 & 2* 50 TUBES	0	0.00	0.00T
LE 5180-0035LBS	LE 5180 PYROSHIELD NLGI 0 & 2* 35 LBS	0	0.00	0.00T
LE 5180-0120LBS	LE 5180 PYROSHIELD NLGI 0 & 2* 120 LBS	0	0.00	0.00T
LE 5180-0400LBS	LE 5180 PYROSHIELD NLGI 0 & 2* 400 LBS	0	0.00	0.00T
	Sales Tax OCT 2011 TO PRESENT		8.75%	0.00

IMPORTANT: Bulletins are date sensitive, these may be superseded by quotes, new bulletins, etc. Items may be discontinued for new models or without notice. See terms & conditions at our website. HOSE LINE 6060 San Fernando Rd Glendale CA 91202 USA [www.HoseLine.Net](http://www.HoseLine.Net) Phone +1 818 547 3010 Fax +1 818 547 3339 [Sales@HoseLine.Net](mailto:Sales@HoseLine.Net)



## Pyroshield® 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.

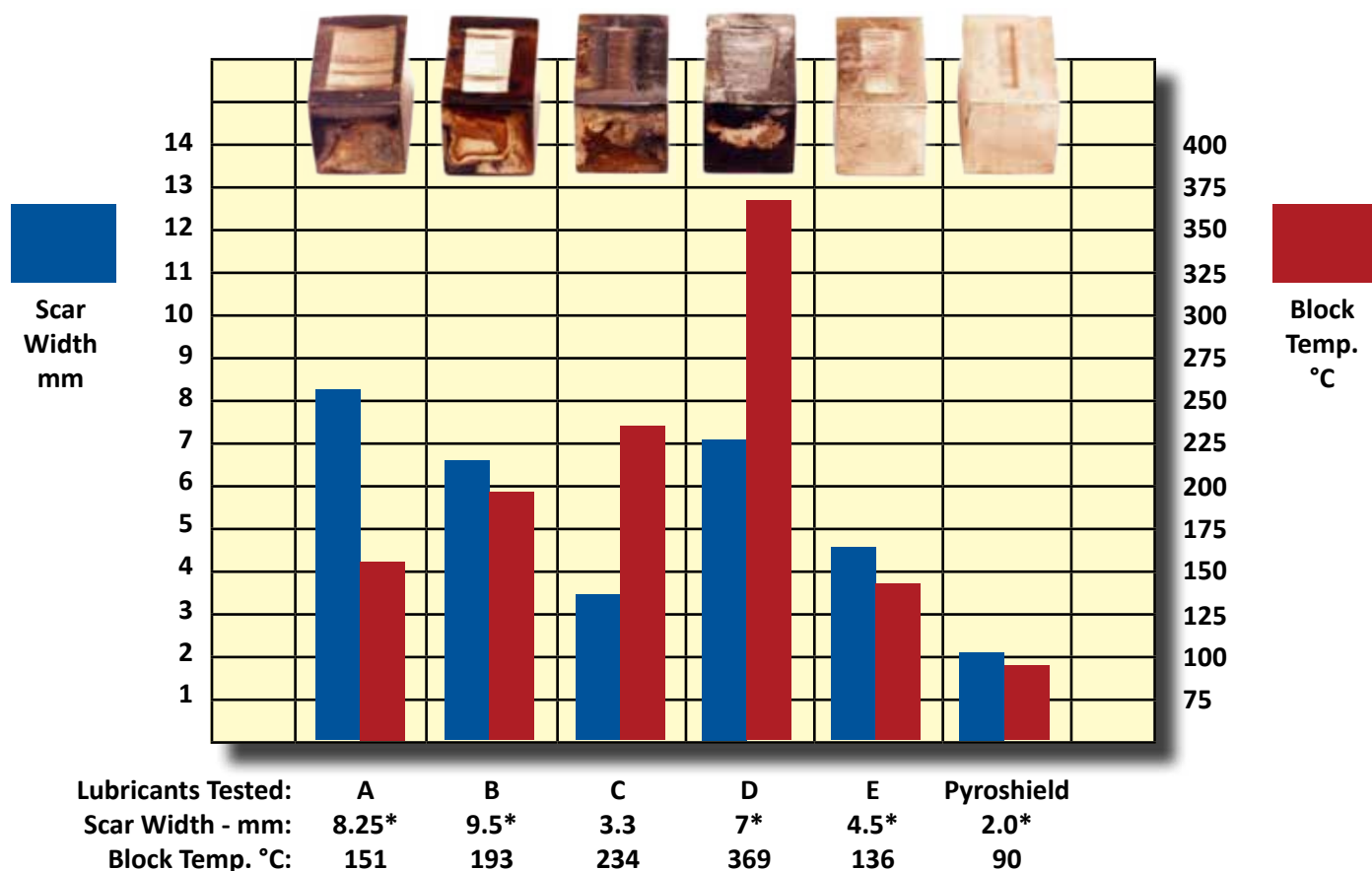
**Almasol®** solid wear-reducing additive is able to withstand extremely heavy loads, chemical attack and temperatures up to 1,900°F (1,038°C). It is attracted to metal surfaces, forming a microscopic layer but not building on itself or affecting clearances. Almasol minimizes metal-to-metal contact and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

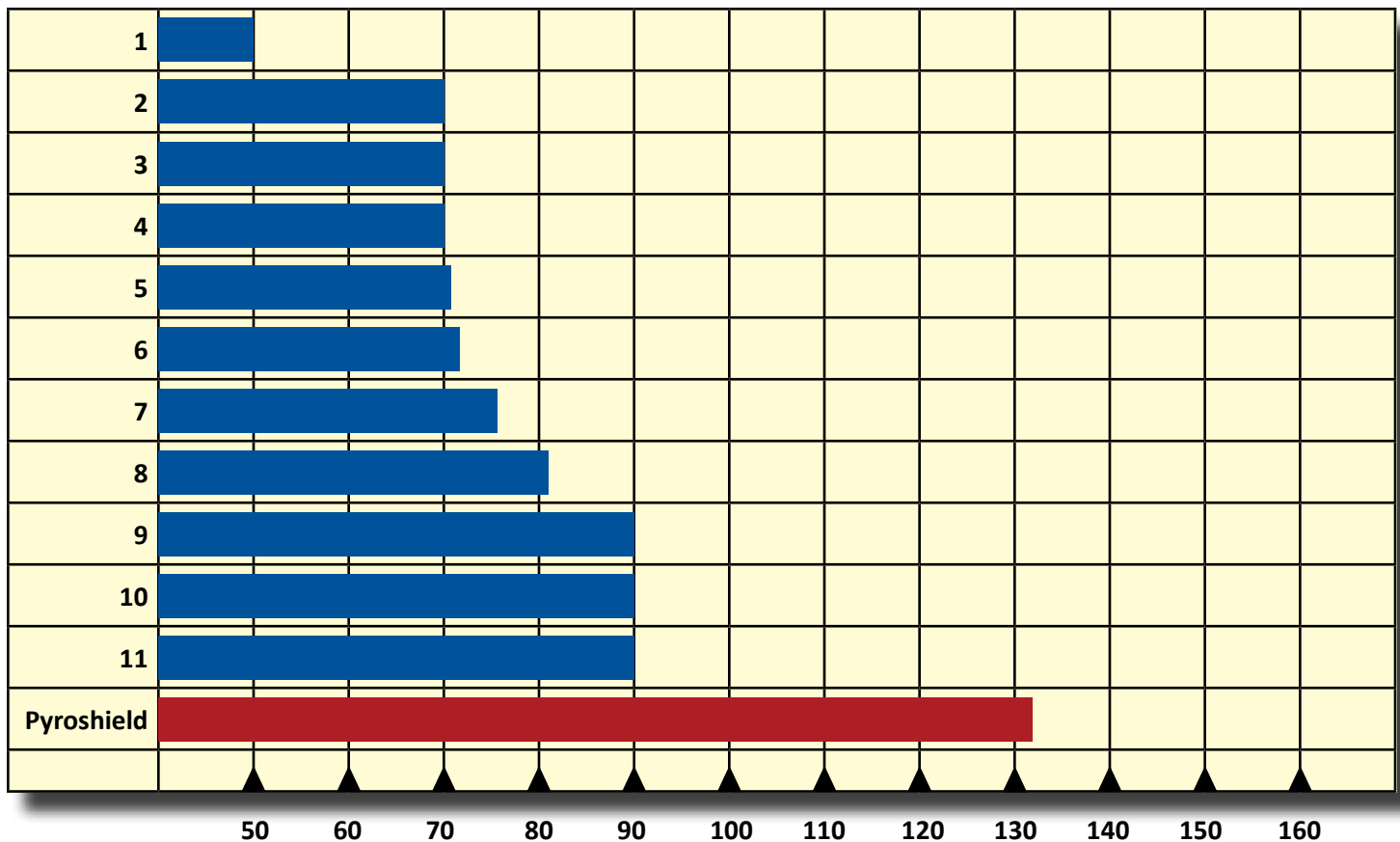


\*Value is an average of widest and narrowest widths for scars that are not parallel to the block edge.

### 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.

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

\* 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® Vari-Purpose Gear Lubricant (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







## Pyroshield® Syn Open Gear Grease (5180)

**Freeman Farms Trucking – Portland, Tenn.**

**Kenworth & Peterbuilt Trucks**

### **Customer Profile**

Freeman Farms Trucking haul produce and other items all over the United States. Steve and Lisa Freeman are the owners of Freeman Farms Trucking and have been in business for more than ten years.

### **Application**

The Freemans have more than a dozen 18-wheeler Kenworth and Peterbuilt trucks they use to haul produce in all kinds of weather.

### **Challenge**

They were not having any problems with the lubricant they were using on the fifth wheels on their trucks, but liked the convenience of the Pyroshield® Syn Open Gear Grease (5180) in the tube.

### **LE Solution**

The local LE lubrication consultant presented Pyroshield 5180 to Steve Freeman, owner, and Ron Scott, driver. Pyroshield 5180 is an extreme pressure lubricant for year-round use on open gears, cams, cables, fifth wheels, and other sliding mechanisms.



### **Results**

When asked how LE's Pyroshield 5180 was working, Ron Scott replied, "I drove 3,000 miles, had 8 drops, and did a lot of turning the last few days and the fifth wheel I greased with the Pyroshield is still wet. It had two completely dry spots on it when I greased it earlier in the week, and the area is still moist and still has plenty of grease on it."

*Thank you to Steve and Lisa Freeman, owners, Ron Scott, driver, and to Chris Nowlen, LE lubrication consultant (pictured), for providing the information used in this report.*



# Customer Testimonial



## Pyroshield® Syn Open Gear Grease (5180)

**Tenn-Luttrell Lime Co. – Luttrell, Tennessee**

**Kennedy Van Saun Ball Mill**

- Lowered operating temperature by 30 degrees
- Reduced annual lubricant consumption by 50 percent
- Doubled the estimated life of the gear set

### Customer Profile

Tenn-Luttrell Lime Company has been in business since 1979, manufacturing quicklime, hydrated lime, and crushed and pulverized limestone products. It has been an LE customer since 1986.

### Application

Tenn-Luttrell uses a KVS ball mill to manufacture lime products. The KVS ball mill is a 450-hp, 9x13-foot, single-pinion-driven mill. The mill operates at 21 rpm, grinding coal to fire the KVS rotary kiln. Lubrication is sprayed on the gears with a pneumatic pump system. The mill operates 330 days per year.

### Challenge

The environment of the lime quarry is very dusty and hot. The gearset on the KVS ball mill was showing premature gear face wear and there was vibration caused by the build-up of the asphaltic product in the gear teeth. The gear teeth were badly worn, but Tenn-Luttrell needed to keep the mill in production to meet sales demands.

### LE Solution

The local LE lubrication consultant, recommended LE's Pyroshield Syn Open Gear Grease (5180), a heavy-duty,

lead-free synthetic lubricant. For the conversion process, he recommended that LE's Almasol® Vari-Purpose Gear Lubricant (609) – now Duolec® Vari-Purpose Gear Lubricant (1608) – be used to clean the gear set. The mill was able to continue operating during this time. After the asphaltic product had been cleaned completely from the gear set, the Pyroshield was applied.

### Results

Prior to the conversion, Tenn-Luttrell had been using 25 drums of the asphaltic product per year. With LE's Pyroshield, the company's annual lubricant consumption was cut to just 12 drums. A 30°F temperature drop was measured on the pinion face after converting to Pyroshield. The maintenance personnel at Tenn-Luttrell estimate that Pyroshield has doubled the expected life of the gear set on this mill, providing the company with significant savings on parts, labor and lost production time.

*Thank you to Joe Felango, owner; Willy Thiels, mechanic and operator; and the local LE lubrication consultant, for providing the information used in this report.*

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