Product Information

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)

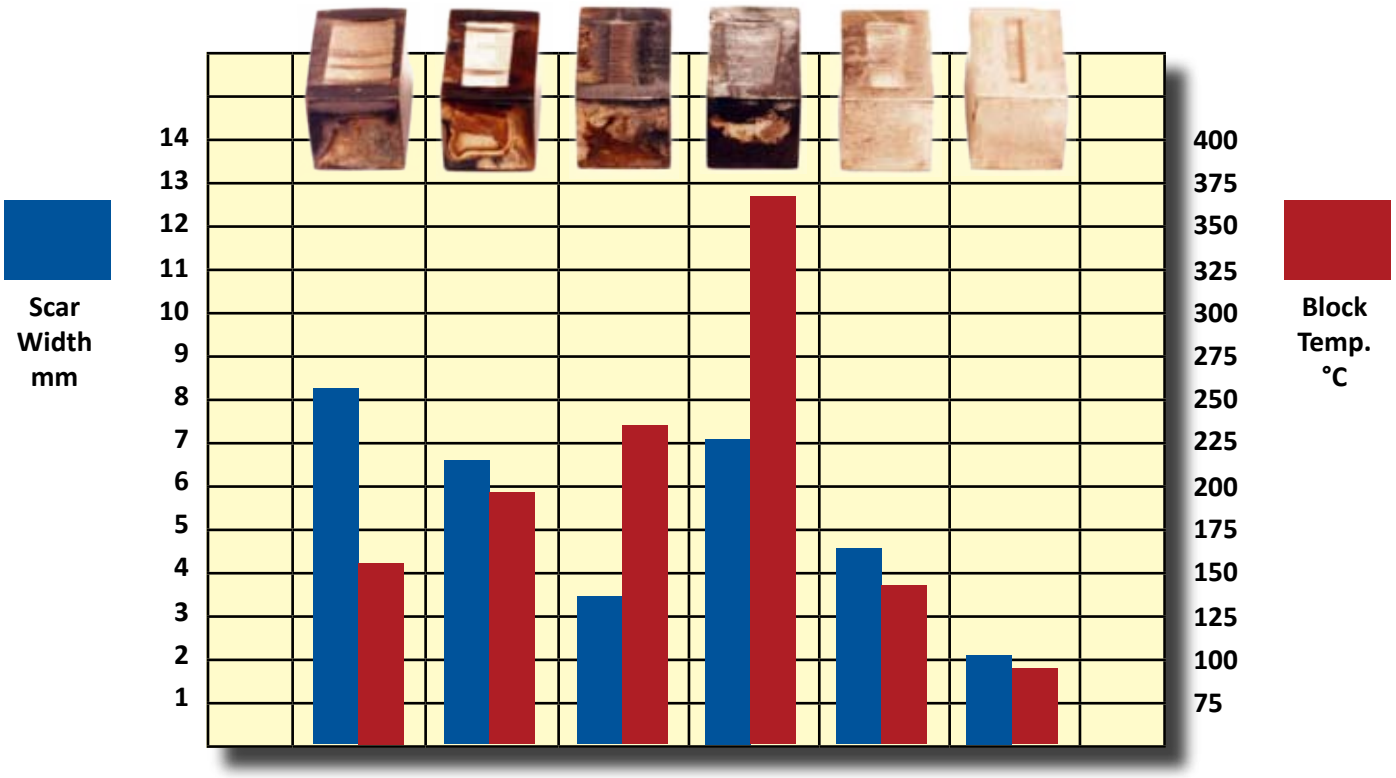
Proprietary Additive

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



Lubricants Tested:	A	B	C	D	E	Pyroshield
Scar Width - mm:	8.25*	9.5*	3.3	7*	4.5*	2.0*
Block Temp. °C:	151	193	234	369	136	90

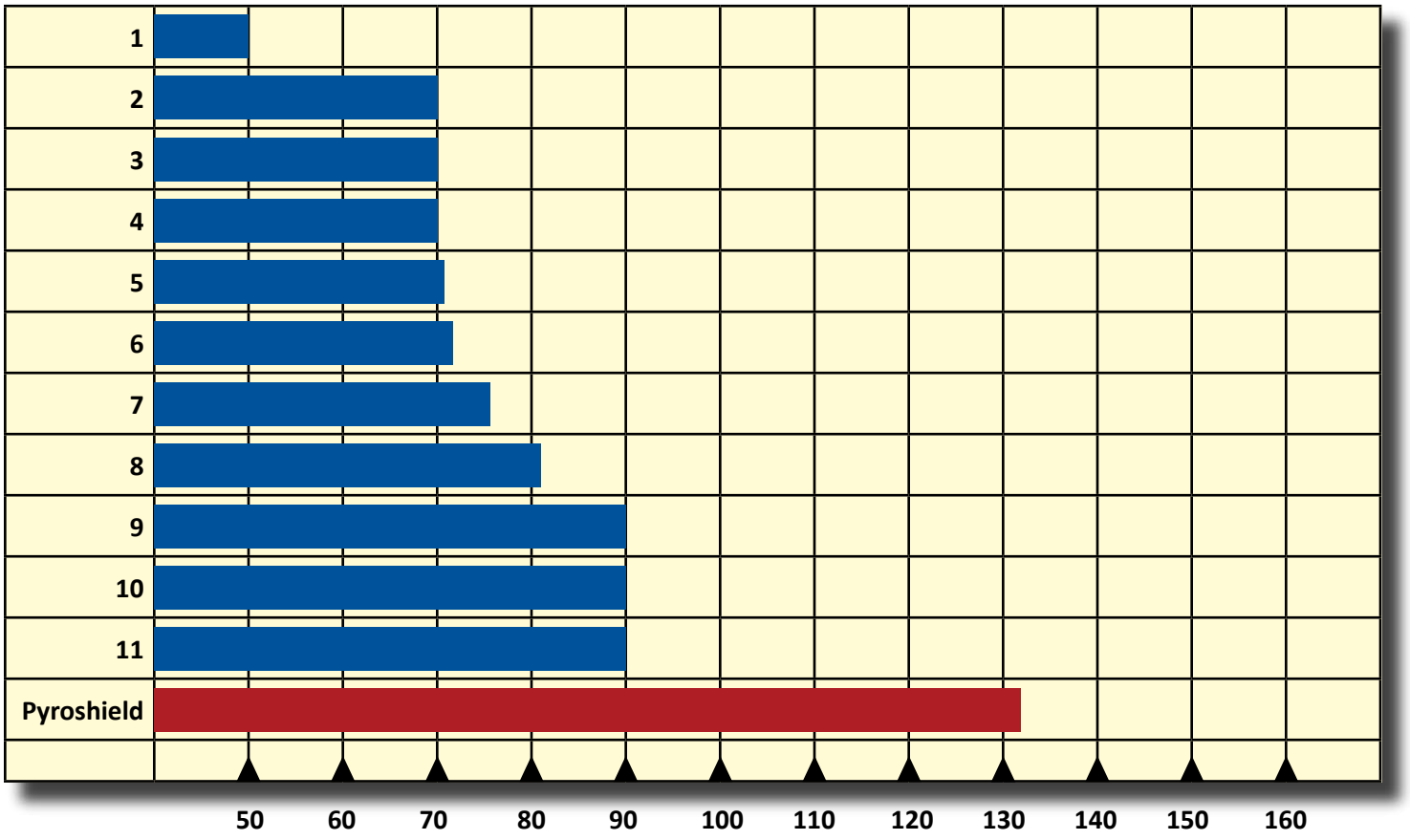
*Value is an average of widest and narrowest widths for scars that are not parallel to the block edge.

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.

Technical Data

Pyroshield® Syn Open Gear Grease

	5182*	5180
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

* 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

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