

## 219 SynForce™ Green NLGI 1 & 2

SynForce™ Green is an extreme pressure, heavy-duty, multi-purpose, aluminum complex base grease that is specifically formulated for use in all types of heavy duty automotive, marine, construction, mining, farming and industrial equipment. Especially equipment exposed to the adverse conditions of extremely heavy loads, excessive pressures, high shock loading, exposure to high amounts of water, high operating temperatures, and dirt contamination. SynForce™ Green is specifically designed in these applications to perform better than a calcium sulfonate and calcium sulfonate complex base greases.

SynForce™ Green is suitable for use in applications where grease contaminated water is a concern. This grease does not contain any environmentally undesirable heavy metals. It also passes the stringent EPA-821-R-02-012 Acute Toxicity (LC50) Testing and has a very low order of aquatic toxicity to marine organisms.

SynForce™ Green is compounded from a blend of polyalphaolefin (PAO) synthetic base fluids, high viscosity index base oils and an aluminum complex base thickener system. Incorporated into this blend are a combination of extreme pressure, anti-wear, rust and corrosion, oxidation inhibiting and adhesive/cohesive additive systems that provide the following performance benefits and advantages:

- Excellent extreme pressure and load carrying capabilities – Four Ball E.P. Weld Point >800 kgs.
- Excellent protection against shock loading that protects and cushions against impact, vibration, stress and chatter during heavy loads and start-stop operations.
- Excellent anti-wear protection for reliable and long lasting protection even during high sliding.
- Excellent resistance to water washout and water sprayoff.
- Very good to excellent shear and mechanical stability.
- Excellent reversibility: This property allows SynForce™ Green to have the ability to retain its grease-like consistency and remain in the bearings during periods of heat, high shock loading, extreme pressures, and severe mechanical action
- Excellent rust and corrosion resistance and protection
- Excellent resistance to oxidation and thermal degradation during high temperature operation
- Very good adhesive and cohesive properties – This property holds the SynForce™ Green together and in place to prevent the entry of contaminants, squeeze-out, channeling and sling-off
- Extended re-lubrication intervals

SynForce™ Green uses an organic, Synthesized Moly which plates itself to metal surfaces of the bearings. Once plated, Synthesized Moly forms a long lasting lubricant film that further reduces friction and wear, especially during periods of high shock loads, vibration and extreme pressure. This lubricant film will withstand pressures up to 500,000 pounds per square inch, giving the metal surfaces of the bearings the protection they need during these extreme conditions.

Synthesized Moly also helps to reduce friction which results in reduced wear, reduced contact area temperatures, increased equipment life, less downtime and extended lubrication cycles.

***The use of Synthesized Moly enables SynForce™ Green to be suitable for use in the lubrication of rolling element bearings and can be used in those rolling element bearing applications that have restrictions on the use of greases that contain molybdenum disulfide (MoS<sub>2</sub>).***

SynForce™ Green may also be used in wheel bearings, including passenger car automotive wheel bearings and electric motor bearings.

SynForce™ Green meets, exceeds and is suitable for use in the following specifications and manufacturer's requirements: US Steel 340, 346,350, 352, 355, 370, 371 and 375 specifications, Caterpillar MPG, Komatsu, MIL-G-234C, Case-IH 251H, John Deere, New Holland, Ford M1693A, General Motors, Chrysler, P&H 472B, 472C and 472D, Federal Specification VV-G-632A, MIL-G-4343C, MIL-G-10924G, MIL-G-23515, MIL-G-7722, MIL-DTL-23544D DOD-G-24508A(Navy), JIS K2220, DIN 515825, SKF, Fag, INA, Torrington, Timken, Rexnord Link-Belt Bearing Division, NSK, Koyo, NTN Bearing, and Roller Bearing Company of America.

## TYPICAL PROPERTIES

<b>NLGI Grade</b>	<b>1</b>	<b>2</b>
Worked Penetration @ 77°F (25°C) (ASTM D217)		
60 Strokes	320	273
10,000 Strokes	327	296
Shear Stability, %	2.3	8.4
Roll Stability Test (With 1% Water) (ASTM D1831 Modified)		
% Consistency Change	4.23%	3.16%
Oxidation Stability (ASTM D942)		
Psi Loss @ 100 hours	2	2
Dropping Point °F (°C) (ASTM D2265)	500° (260°)	500° (260°)
Rust Inhibition Test (ASTM D1743)		
Rating	1,1,1	1,1,1
Four Ball E.P. (ASTM D2596)		
Weld point, kg-f	>800	>800
Load Wear Index	147.7	138.7
Four Ball Wear, 40kg, 1200 rpm, 167°F (75°C), 1 hour (ASTM D2266)		
Scar diameter, mm	0.63	0.41
Falex Continous Load (ASTM D3233 Procedure A)		
Failure Load, lbs-f	4500+	4500+
Water Washout (ASTM D1264)		
% Loss @ 175°F (79°C)	8.59%	5.57%
Copper Strip Corrosion (ASTM D4048)	1A	1A
Oil Separation @ 100°C, 30 Hours (Conical Sieve Method) (ASTM D6184)		
% weight Separation	4.4%	4.4%
Operating Temperature Range °F	0° to 350°	10° to 350°
<b>Base Oil Viscosity</b>		
Viscosity, cSt @ 40°C (ASTM D445)	101	142
Viscosity, cSt @100°C (ASTM D445)	11.75	14.6
Viscosity Index (ASTM D2270)	104	101
Flash Point °F (°C) (ASTM D92)	493° (256°)	530° (277°)