



## **AR8200 NLT HIGH PERFORMANCE GREASE**

### ***DESCRIPTION: NANOBORATE LUBRICATION TECHNOLOGY***

**AR8200** High Performance Grease, with Nanoborate, is designed for extreme pressure and extreme temperature applications, formulated to provide maximum lubricity, wear reduction, EP, and corrosion protection in heavy equipment, bearings, gears, for all extreme environments. **AR8200** is the latest development in the grease industry incorporating the most advanced solid boundary nanoborate lubricant offering properties surpassing previous boron lubricants and far exceeding traditional AW additives such as zinc, phosphorous, chlorinated paraffin's which are all toxic and deplete as acidic and become corrosive. Nanoborate also is superior to EP additive packages found in specialty greases such as moly, graphite and boric acid.

### ***NANOBORATE:***

A new approach has been developed to incorporate boron-containing nanoparticles in a naturally occurring fatty acid ester matrix carrier. This ester has a high affinity for absorbing on the surface of metal and facilitates the movement of the boron nanoparticles to the surface. Boron technology was originally developed at Argonne National Laboratories under Ali Erdemir, an award winning Tribologist proving that boron is an advanced solid boundary lubricant exhibiting very low surface coefficients and a high extreme pressure agent. This nanoborate lubrication technology is three times the bearing loads than any boron lubricant and many times that of any solid boundary lubricant. The surface friction coefficient exhibited a figure of 0.037 which is almost half of the 0.071 value of other boron lubricants.

**AR8200** is made with superior quality oils, specialized additive package and synthetic thickeners. The thickener is the latest technology developed in the grease industry. Calcium Complex offers properties never before available in multipurpose grease, superior corrosion protection. Calcium Sulfonates are known worldwide for their corrosion protection

**AR8200** is completely shear stable. There is no loss of thickening power over 100,000 cycles in a grease working test. This offers long re-greasing intervals in high speed bearings.

**AR8200** offers a very high dropping point. It can be used in any high temperature application suitable for petroleum base grease. High polymer content equals exceptional water washout of 0.05 and water spray off protection. The Calcium Sulfonate Complex

thickener also contributes with the nanoborate to maintain machine parts free from damaging deposits and contamination buildup.

With excellent EP properties **AR8200** can withstand the toughest load conditions offered by manufacturing equipment, off road machinery and perfect for chassis lubrication on heavy trucks. Nanoborate replaces and exceeds the toxic and acidic EP/AW additive packages found in most lubricants. Contains no heavy metals, PTFE, moly, sulfur, graphite, boric acid, chlorinated paraffin, zinc, phosphorous, barium, phenols, antimony or lead

***Features/Benefits:***

- Nano lubrication technology - nanoborate
- Extremely low friction surface coefficient of 0.037
- Highest load bearing 4000 lbs (3 times that of any boron)
- Excellent corrosion protection in marine environments
- Shear stability over thousands of cycles
- Very high dropping point (-35F to 550F)
- Nanoborate replaces all AW/EP additive packages in oil
- A true premium quality multi-purpose grease
- The latest advanced calcium complex technology
- Far superior to moly, graphite or boric acid
- Compatible with water
- REACH approved ingredients

***APPLICATIONS:***

Applications include 'O' rings gaskets, bearings, gears, valves, universal joints, electric motor bearings, fifth wheels, wheel bearings, pump bearings, heavy equipment, industrial, commercial fleet, railroad, racing, industrial gearboxes, marine, wire rope, threads, etc.

***PACKAGING:***

14oz tubes, 5 gallon pails, 55 gallon drums.

## TYPICAL PROPERTIES

NLGI Grade .....	2
Thickener type .....	Overbased Calcium Sulfonate
Color.....	Tan
Worked Penetration, ASTM D 217, 60 strokes.....	265-295
Worked Penetration 10,000 strokes .....	+2
Worked Penetration 100,000 strokes .....	+2
Dropping Point, ASTM D 2265, °F (°C).....	>550 (>288)
4 Ball Wear test ASTM D 2266, mm scar, 40 kg, 1200 RPM 75°C, 1 H.....	0.42
4 Ball EP test, ASTM D 2596 Weld point, kgf, min .....	400
Base Fluid Characteristics	
Viscosity @ 40°C, cSt.....	195
Viscosity @ 100° C, cSt.....	15.3
Viscosity @ 100° F, SUS.....	1041
Viscosity @ 200° F, SUS .....	81
Viscosity Index.....	75



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