



## **AR8100 BIOSYN SYNTHETIC BIODEGRADABLE GREASE**

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

**AR8100** compliments our AR8200 calcium sulfonate based grease in performance utilizing nanoborate and also 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.

**AR8100** 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.

**AR8100** is made with Durasyn 148 high VI synthetic oil, specialized additive package and fumed silica thickeners for high temperatures.

**AR8100** 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.

**AR8100** 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. With excellent EP properties **AR8100** 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
- Low water washout of 0.05
- 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.....Inorganic  
Texture ..... Slightly Tacky  
Color .....Pale Yellow

Worked Penetration, ASTM D 217, 60 strokes..... 265-295  
Dropping Point, ASTM D 2265, °F (°C) .....>550(>288)  
4-Ball EP test, ASTM D 2596  
Weld point, kgf, min..... 200

Base Fluid Characteristics  
Viscosity @ 40°C, cSt.... 49  
Viscosity @ 100° C, cSt.....7.8  
Viscosity @ 100° F, SUS.....52  
Viscosity @ 200° F, SUS .....225  
Viscosity Index.....147

