



## AR9100 INDUSTRIAL FRICTION MODIFIER

**Archoil's** patented potassium Nanoborate lubrication technology dramatically reduces operating friction protecting equipment from wear, extending operating life, and reducing operating energy requirements.

Boron lubrication technology was initially developed at the Argonne National Laboratory for the US Dept. of Energy. Representing a ground-breaking advance in lubrication technology, boron was demonstrated to greatly enhance lubrication protection through the formation of a nearly frictionless solid boundary layer.

Since 1990, when Dr. Ali Erdemir discovered that boron was the most effective extreme pressure agent and created solids with the lowest measured friction coefficients, tribologists (lubrication scientists) have recognized the tremendous advancement boron lubricants represented. Initial efforts to commercialize boron lubricants were hampered by large boric acid particle sizes.

**Archoil's** revolutionary new potassium nanoborate formulation represents the 2<sup>nd</sup> generation in boron tribology and another huge leap forward in lubrication with its unique ability to reduce boron size down to the more efficient 'nano' level and deliver it in a naturally occurring fatty acid ester matrix carrier. **AR9100's** proprietary ester carrier is specially formulated to facilitate the migration of the protective boron nanoparticles to surface metal.

**AR9100's** surface friction coefficient tests at 0.037. It is dramatically more lubricious than traditional lubrication oils, and it is capable of bearing loads many times that of other solid boundary lubricants.

**AR9100** is highly concentrated. Dilute in standard lubrication oil as directed for the specific application.



### FEATURES / BENEFITS:

- 🔥 Reduces surface friction 60-80%
- 🔥 Reduces operating energy requirements / increases fuel efficiency
- 🔥 Increases horsepower
- 🔥 Reduces fluid system wear up to 75%
- 🔥 Minimizes fluid oxidation- extends the oil drain cycle / reduces downtime
- 🔥 Reduces operating temperatures up to 30% - 40%
- 🔥 Inhibits corrosion
- 🔥 Extreme Pressure agent -absorbs shock loads of up to 4000 lbs
- 🔥 Cleans out pre-existing carbon and varnish build up
- 🔥 Reduces emissions
- 🔥 Biodegradable and non-toxic

**SPECIFICATIONS:**

Color.....	Brown liquid
Base Fluid.....	Fatty acid esters
Viscosity.....	150 SUS at 100 <sup>o</sup> F
Specific Gravity .....	1,000 at 25 <sup>o</sup> C
Nano variants.....	Nanoborate (proprietary processing)
D.O.T. ....	Unregulated
V.O.C. ....	None
Biodegradable .....	Yes

**SUMMARY OF TEST RESULTS:**

<u>Falex Pin &amp; Vee Test</u>	<u>ASTM D-3233</u>
(3.5% in 100 neutral mineral oil):	
Load	3750
Torque	47
COF	0.037 ( <i>coefficient of friction</i> )

**APPLI CATION:**

Engine oil treat at 28.5 to 1, 1.12 oz per quart  
Motorcycles wet clutch or not 1.12 oz per quart  
Gear oil treat at 10-1, 3.2oz per quart  
Hydraulic oil treat at 10-1, 3.2oz per quart  
Automatic transmissions treat at 1oz per gallon

**PACKAGING:**

8 oz. bottle  
16 oz. bottle  
32 oz. bottle  
1 gallon pail  
5 gallon pail  
55 gallon drum

Technical Support: 203-265-5700

**ARCHOIL, 69 North Turnpike Road, Wallingford CT 06492**  
**203-265-5700 Fax: 203-284-5908 www.archoil.com**