

# ADVANCED SURFACE TECHNOLOGIES

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## Boron Nitride Electroless Nickel

AST offers one of the most technologically advanced plating composites in industry - **Boron Nitride Electroless Nickel (BNEN)**.

The process incorporates Boron Nitride particles into a medium-phosphorus Electroless Nickel deposit in thicknesses ranging from .00005-.002 inches. BNEN is ideal for parts that require both hardness as well as lubricity and can be plated on Aluminum, Copper, Brass, Magnesium, Stainless Steel and Steel.

Benefits include exceptionally low coefficient of friction, superior release and high abrasion resistance. Unlike EN-PTFE, another process that provides excellent lubricity, BNEN deposits can be heat treated to attain maximum hardness for very severe wear applications.

### Deposit characteristics

- Physical appearance: Matte
- VHN (Vickers Hardness) as plated: 550
- VHN, heat treated 20 min @ 400°C (750° F): 850
- High abrasion resistance
- Heat treatable
- Melting range 880-1200° C (1620-2190 ° F)
- Magnetic Properties: Magnetic
- Uniform Boron Nitride Particle Distribution
  - 6-8% by weight
  - 15-20% by volume
- Uniform Deposit
- Density 8.1 g/cc
- Very low coefficient of friction (COF)

### Applications

- Reduces wear on valuable tools, equipment, etc.
- Improve release properties of molds and dies
- Eliminates liquid lubricants
- Reduces galling
- Noise reduction
- Uniform, no post plate grinding
- Superior protection against abrasion
- No reduction in fatigue strength of substrates
- Allows lighter substrates in abrasive conditions

