



OPTAKOAT® is a dense nickel phosphorus plating specifically developed for the Optics & Diamond turning industry. The deposit is highly reflective & can easily be diamond turned. Amorphous in structure, OPTAKOAT® can be coated to a thickness of .025 or more & will significantly reduce imperfections. OPTAKOAT® has several advantages over current coatings used for diamond turning such as Electroless Nickel, including significant improvements both the diamond tool life & coated component yield. OptaKoat is preferred over electroless nickel for most applications.

This deposit is totally amorphous
Improving diamond turning results

USER BENEFITS

Non-laminar Deposition
Phosphorous Content greater than EN
Lower void volume, fewer defects than EN
Polishes to a Superior Finish
Amorphous Glass-Like Structure

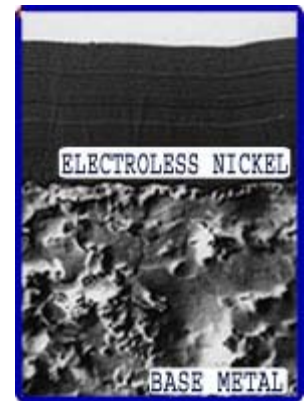
Significantly Extends Diamond Tool Life
(up to 8 times longer)
Non-Magnetic
Superior Corrosion & Wear Resistance

PROPERTY

Composition
 Coefficient of Friction
 Corrosion Resistance
 Neutral Salt Spray (ASTM B-117)
 RCA Nitric Acid Test
 Hardness
 • As Deposited
 • Bake 750°F/1 hour
 Melting Point
 Density
 Internal Stress
 Tensile Strength
 Ductility
 • Per ASTM Bend Test

TYPICAL VALUE

85-88% Nickel; 12-15% Phosphorous by Weight
 .13
 1,000+ hours @ .001"
 500 hours @ .0003"
 Superior to High Phosphorous Electroless Nickel
 Rockwell C 48-51
 Rockwell C 70-72
 1630°F
 7.6 g/cm³ (0.27 pounds/inch³)
 None
 ~100 KSI
 ~270 KSI
 10%-15% elongation typical



Notice the Stratification (or Laminar deposit.) EN often has discrete sites of crystalline structure

TYPICAL APPLICATIONS

Operations requiring superior corrosion & wear resistance, excellent mechanical properties, and/or heavy deposits. Typical applications for OPTAKOAT® : Diamond turning for precision Optics, rollers for lenitcular lenses & digital printing, wear resistant coatings on molds, used as a material for molds requiring a flawless finish. Used for technical lenses for CD & DVD players, mobile phones, fresnel lenses & mirrors. Used for dies for microfluidics injection molding & hot embossing.



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