



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

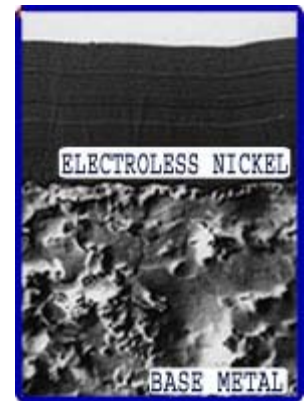
- Per ASTM Bend Test

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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