



**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**

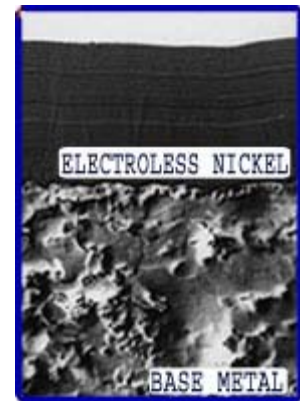
**Significantly Extends Diamond Tool Life (up to 8 times longer)**  
**Non-Magnetic**  
**Superior Corrosion & Wear Resistance**

## 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/cm<sup>3</sup> (0.27 pounds/inch<sup>3</sup>)  
 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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