



## Industry Uses:

- Rubber/Plastic Mold Surfaces
- Food Processing Equipment
- Aerospace Applications

Call: (937) 253-5311

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### Typical, As Plated Properties:

- Coefficient of friction: < 0.1 static
- Corrosion resistance 1 mil deposit
  - Salt Spray ASTM B117:
    - 1,000 hours to first red rust
  - Passes Nitric acid test (30 sec.)
  - Passes Hydrochloric test (3 min.)
- Ductility (% elongation): 0.5 - 1
- Modules of Elasticity (Mpsi): 30
- Tensile Strength (Kpsi): 100
- Density (g/cm): 7.82
- Internal Stress (Kpsi): -3.0
- Composition:
  - Nickel, % by Wt: 88%
  - Phosphorus, % by Wt: 11%
  - PTFE, % by Wt: < 1%
  - PTFE, % by Vol: Depends upon surface properties
- Temperature Limits:
  - PTFE Decompression: 600°F
  - EN Melting Point: 1630°F
- Coefficient of Thermal Expansion: 5.5-6 (in/in/F); 11-12 (m/m/C)
- Thermal Conductivity: 0.013 (cal/cm/sec/C)
- Electrical Resistivity: 110 microhm-cm
- Tabor Abraser Wear Resistance Test: 15-18 (wt./loss mg/1,000 cycles)

## Electroless Nickel (TM 117P)

TM 117P is a high phosphorus Electroless Nickel (9%+), hardened to 64 to 70 Rockwell C and post applied with PTFE. This non-magnetic coating provides a very accurate, dry lubricated hard surface. It has excellent resistance to adhesive wear, with great release properties.

TM 117P is used on mold surfaces for both plastic and rubber, food processing equipment, computer components, aerospace applications and more.

### Technical Advantages

- Complete coverage on complex shapes for corrosion resistance
  - Uniform thickness eliminating post process treatment such as grinding
  - Excellent non-stick properties for molding and forming operations
  - Low coefficient of friction, especially in the break-in-stages
  - Lower cost than co-deposits of Nickel and PTFE
  - Extended life of coated parts due to the reduction of wear
  - Often eliminates the use of release products in molding
  - Reduces cycle times
  - Can be plated on aluminum and other non-ferrous metals
  - Knoop Hardness (50g load, 3.0 mil deposit): 790-940 kg/mm
- Approximate Rockwell Hardness: 64-70 C Scale

**CAUTION - While the deposit remains viable, the PTFE particles are damaged at temperatures over 600°F. Consider UltraKoat™ for higher temperature applications.**