TECHMETALS
ENGINEERED METAL FINISHING & PERFORMANCE COATINGS

## Industry Uses:

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

Call: (937) 253-5311 www.techmetals.com

### Typical, As Plated Properties:

- Coefficient of friction
  - Chromium steel: 0.2–0.3
  - TM 117C : 0.1–0.2
- Corrosion resistance
  - Salt Spray ASTM B117:
    1,000 hours to first red rust
  - Passes Nitric acid test (30 sec.)
  - Passes Hydrochloric test (3 min.)
- Composition:
  - Nickel, % by Wt: 84–85%
  - Phosphorus, % by Wt: 10–12%
  - PTFE, % by Wt: 3–5%
  - PTFE, % by Vol: 10–20%
- Temperature Limits:
  - PTFE Decompression: 600°F
  - EN Melting Point: 1630°F
- Coefficient of Thermal Expansion:
  6.7 (in/in/F); 12.1 (m/m/C)
- Thermal Conductivity:
  0.01 (cal/cm/sec/C)
- Electrical Resistivity:
  130–200 microohm-cm
- Tabor Abraser Wear Resistance Test:
  15–18 (wt./loss mg/1,000 cycles)
  Pin & Ring Wear Resistance Test:
  - Pin: TM 117C, 250 Knoop (100)
  - Ring: Chromium steel (40); Ting TM 117C (1)

# Electroless Nickel (TM 117C)

TM 117C is a high phosphorus Electroless Nickel (9%+) coating with a co-deposit of PTFE. This non-magnetic coating provides a very accurate and hard surface – with an excellent resistance to adhesive wear and release properties.

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

## Technical Advantages

- Provides excellent release for straight, no draft cores or cavities
- Enhances resin flow, which helps increase cycle time
- Helps maintain gloss levels
- Reduces or eliminates the need for spray-on release agents
- Uniform thickness eliminates most post-process modifications
- Excellent non-stick properties
- Can be plated on aluminum and other non-ferrous materials
- Uniform dispersion of PTFE particles throughout the coating
- Typical, as plated Knoop hardness:
  (100g load, 0.3 mil deposit): 400–460 (kg/mm)

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