



Low Phosphorous Electroless Nickel Specifications

TWR's Low Phosphorus Electroless Nickel is designed by the manufacturer to provide a high quality electroless nickel deposit from a highly stable plating solution. The bath plates at approximately 0.7-1.0 mil per hour, depositing nickel phosphorus coating that provides solderability, hardness, and engineering properties. The deposit hardness as plated, without heat treating is 750-850HK100. If the deposit is heat treated, particles of Ni₃P will precipitate and the coating crystallizes, resulting in a significant increase in the hardness and wear resistance.

PROPERTIES

Nickel Content: 97%-99%

Phosphorus Content: 1%-3%

Internal Stress: Slightly Tensile

Tensile Strength: 200-400 MPa

Elongation: .5-1.5%

Modulus of Elasticity: 55-65 GPa (2.8 X 10⁸ psi)

Density: 8.6-8.8 g/cm³

Melting Point: 1250-1360°C (2282-2480 °F)

Hardness - As Plated: 750-850 HK100 (61-65 Rockwell C)

- Heat Treated: 900-1100 HK100 (67-70+ Rockwell C)

Electrical Resistance: 20-40 uohms/cm²

Thermal Conductivity: 0.015 cal/cm/sec/°C

Coefficient of Thermal Expansion: 18-22 um/m/°C

Magnetic Properties: Magnetic

Taber Wear Resistance: 7-13 (mg/1000 cycles-CS-10 Wheel, 100g load)

RoHS & ELV requirements for cadmium <100ppm, no mercury and lead <1000ppm are met by this coating

All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof is not guaranteed. Since conditions of use are outside our control, user shall, before using, determine the suitability of the product for his intended use and user assumes all risk and liability whatsoever in connection therewith.

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