COMPARISON OF ELECTROLESS VS. ELECTROLYTIC NICKEL DEPOSITS

Nickel Properties	Electrolytic	Electroless
Composition	99 + % Ni	Avg.92% Ni 8% P
Appearance	Dull to bright	Semibright
Structure	Crystalline	Amorphous
Density	8.9	Avg. 7.9
Thickness uniformity	Varies	± 10%
Melting Point	1455 C	890 C (apprx)
Hardness, as plated	150- 400 VHN	500-600 VHN
Heat Hardning	No effect	To 1000 VHN
Wear Resistance	Fair	Excellent
Magnetic Properties	Susceptible	Non-Suscep.
Electrical resistivity	7 micro/ohm/cm	60-100 m/o/cm
Thermal conductivity	0.16 cal/cm/sec/C	0.01-0.02
Coefficient of expansion	7.5 in/in./F x 10	7.8
Elongation	6-30%	2%
Internal Stress	±10 ksi	±10 ksi
Friction coefficient vs. steel		
Unlubricated	Galling	0.38
Lubricated	0.2	0.2

TCP

TWIN CITY PLATING CO.

Roger W. Plath,
President

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