

ELECTROLESS NICKEL TECHNICAL DATA

ENGINEERED SOLUTIONS IN SURFACE FINISHING



Property	Low-Phosphorus	Mid-Phosphorus	High-Phosphorus
COMPOSITION	3 TO 4% P, BALANCE NI	6 TO 9% P, BALANCE NI	11 TO 12% P, BALANCE NI
STRUCTURE	MICRO- CRYSTALLINE	MIXED CRYSTALLINE AND AMORPHOUS	AMORPHOUS
INTERNAL STRESS	-10 MPA	+40 MPA	-20 MPA
FINAL MELTING POINT	1275° C	1000° C	880° C
DENSITY	8.6 G/CM ³	8.1 G/CM ³	7.8 G/CM ³
COEFFICIENT OF THERMAL EXPANSION	12.4 K ⁻¹	13 K ⁻¹	12.0 K ⁻¹
ELECTRICAL RESISTIVITY	30 mΩ • cm	65 mΩ • cm	100 mΩ • cm
THERMAL CONDUCTIVITY	0.6 W/CM•K	0.05 W/CM•K	0.08 W/CM•K
SPECIFIC HEAT	1,000 J/KG•K	ND	460 J/KG•K
MAGNETIC COERCIVITY	10,000 A/M	110 A/M	0
TENSILE STRENGTH	300 MPA	900 MPA	800 MPA
DUCTILITY	0.70%	0.70%	1.50%
MODULUS OF ELASTICITY	130 GPA	100-120 GPA	170 GPA
HARDNESS, AS DEPOSITED	700 HVI00	600 HVI00	530 HVI00
HARDNESS, HEAT TREATED	960 HVI00	1000 HVI00	1050 HVI00
COEFFICIENT OF FRICTION	ND	0.38	0.45
TABER WEAR INDEX, AS DEPOSITED	11 MG/1,000 CYCLES	16 MG/1,000 CYCLES	19 MG/1,000 CYCLES
TABER WEAR INDEX, HEAT TREATED	9 MG/1,000 CYCLES	12 MG/1,000 CYCLES	12 MG/1,000 CYCLES
CORROSION PROTECTION, SALT FOG RESISTANCE	10-24 HOURS THICKNESS DEPENDENT	10 - 192 HOURS THICKNESS DEPENDENT	10 -1000 HOURS THICKNESS DEPENDENT

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