CuNi18Zn20

CuNi18Zn20 | C76400

C76400 is a nickel silver that exhibits medium to high strength, excellent stiffness, good formability, corrosion resistance, and solderability. It is a suitable alloy for connectors and relays. Its excellent corrosion resistance allows for use in harsh environments.

Comparable Standarts

EN	UNS
CW409J	C76400

Chemical Composition %

Cu	Zn	Ni	Sn	Fe	Pb	Mn
60-63	rem	17-19	0.03 max	0.3 max	0.03 max	0.5 max

Physical Properties

Melting Point	1060-1110	[°C]
Density	8.72	(g/cm³)
Cp @ 20°C	0.383	[kJ/kgK]
Thermal Conductivity	33	(W/mK)
Electrical Conductivity	≥6	%IACS
Modules of Elasticity	125	[GPa]
α @ 20°C	17.7	[10-6/K]

Note: The specified conductivity applies to the soft condition only.

Cp specific heat

α thermal expansion coefficent

Fabrication Properties

Machinability	less suitable
Electrolytic Coating Feature	excellent
Soft Soldering	excellent
Gas shield arc welding	excellent
Laser Welding	fair
Cold Formability	excellent
Resistance welding	excellent
Hot-dip tinned properties	excellent

Electrical Conductivity

Electrical conductivity depends on chemical composition, level of cold deformation, and grain size. High levels of deformation and small grain size reduce conductivity.

Typcial Uses

Relay springs, glass hinges, connectors, components for the watch industry, pressure diaphragms, cutlery, and various parts for electronic and optical instruments. Parts manufactured through pressing, folding or bending, and cutting.

Corrosion Resistance

Nickel silver materials are resistant to atmospheric effects, organic compounds, and neutral and alkaline saline solutions.
Nickel silver materials are not resistant to oxidizing acids and aqueous ammonia solutions.

Mechanical Properties

	Tensile Strength [MPa]	Yield Strangth [MPa]	Elongation A50 [%]	Hardness HV [-]	Bend ratio 90° [r]	
					GW	BW
R380	380-450	≤ 250	≥ 27	85-115	0	0
R450	450-520	≥ 250	≥ 9	115-160	0	0
R500	500-590	≥ 410	≥ 3	160-190	0	0
R580	580-670	≥ 510	-	180-210	0	0.5
R640	640-730	≥ 600	-	200-230	2	4

Other tempers are available upon request.

r = x * t (thickness t ≤ 0.5mm)

GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction.

Dimensional Specifications

Thickness (mm)	Width (mm)
0.10-0.20	10-340
0.21-1.00	5-340
1.01-4.00	15-340
4.01-5.00	25-340

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