C77000

NB17 – CuNi18Zn27

SUNDWIGER Messingwerk

Material Designation

DIN-EN Symbol	CuNi18Zn27
DIN-EN	CW410J
UNS	C77000
JIS	C7701

Physical Properties

Electrical conductivity soft	3	MS/m
Thermal conductivity	27	W/(m·K)
Thermal expansion coefficient **	17	10-6/K
Density	8,8	g/cm³
Modulus of elasticity	135	GPa = kN/mm²

* Reference values at room temperature
** Between 20 and 300 °C

Nominal Composition (mass content in %)

Cu	Balance
Ni	18
Zn	27
Fe	< 0,2
Mn	< 0,5
Pb	< 0,01
Other	< 0,1

Typical Applications

- Coins
- Caps for quartz crystals
- Electromagnetic shieldings
- Deep drawing parts
- Tableware
- Security keys
- Cutlery
- Contact springs
- Connector
- Leaf springs for relays
- Electric contacts

About The Alloy

NB17 is a nickel silver alloy containing 18 % nickel and 27 % zinc.

The alloy has good cold-forming properties, is tarnish resistant and has particularly good spring properties.

Like all copper alloys the copper-nickel-zinc alloys are not susceptible to embrittlement at lower temperature. The corrosion resistance of nickel silver is considerably better than that of binary copper-zinc alloys.

NB17 is insensitive to stress corrosion cracking. NB17 is used for contact springs in relays, EMI shieldings and jewelry.

Mechanical Properties *)

Temper condition		O **R 390** H 90	H01 **R 470** H 120	H02 **R 540** H 170	H04 **R 600** H 190	H06 **R 700** H 220	H08 **R 760** H 230
Tensile strength in N/mm²		390 - 470	470 - 540	540 - 630	600 - 700	700 - 800	760 - 850
0.2 % yield Strength in N/mm²		280	280	450	550	650	700
Elongation A_{L50} %		> 33	> 11	> 5	> 2	> 1	-
Vickers hardness HV		90 - 120	135 - 180	170 - 200	190 - 220	220 - 250	230 - 260
Electrical conductivity in % IACS		5	4	4	4	4	4
Minimum radius of the bending mandrel for 90° bend and strip thickness s							
0.10 ≤ s ≤ 0.25 mm	transverse parallel	0 x s 0 x s	0 x s 0 x s	0 x s 0 x s	0 x s 0 x s	0 x s 1 x s	- -
0.25 < s ≤ 1.0 mm	transverse parallel	0 x s 0 x s	0 x s 0 x s	0 x s 0 x s	0 x s 1 x s	2 x s 5 x s	- -

*) Reference values

Processing Instructions	
Cold forming properties	very good
Machinability	satisfactory
Electroplating properties	very good
Hot-dip tinning properties	satisfactory
Soldering	satisfactory
Resistance welding	very good
Gas shielded arc welding	good
Laser welding	good

Available Versions
Coils with standard outer diameters of 1200 mm
Strips in reel form with coil weight of up to 1500 kg
Multipancake up to 2.5 t
Hot-dip tinned strips
Profiled strips
Electroplated strips (tin, nickel)

Available Dimensions
Bright pre-rolled strips 1 to 2.5 mm
Precision strip thickness from 0.05 to 1.2 mm
Strip width from 3.0 to 600 mm, but at least 10 times of the strip thickness
Other widths available on request

Your Local Contact Person

Europe	Asia

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