C75700

NB12 – CuNi12Zn24

SUNDWIGER Messingwerk

Material Designation

DIN-EN Symbol	CuNi12Zn24
DIN-EN	CW403J
UNS	C75700
JIS	-

Physical Properties

Electrical conductivity soft	4	MS/m
Thermal conductivity	33	W/(m·K)
Thermal expansion coefficient **	17	10-6/K
Density	8,7	g/cm³
Modulus of elasticity	125	GPa = kN/mm²

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

Nominal Composition (mass content in %)

Cu	Balance
Ni	12
Zn	24
Fe	< 0,2
Mn	< 0,5
Pb	< 0,01
Other	< 0,2

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

NB12 is a nickel silver alloy containing 12 % nickel and 24 % zinc.
The alloy has good cold-forming properties and is particularly suitable for deep-drawing.

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.

NB12 is insensitive to stress corrosion cracking. NB12 is used for contacts, deep-drawing parts and for optical goods.

The alloy is registered with the U.S. EPA as Antimicrobial.

Mechanical Properties *)

Temper condition		O **R 350** H 80	H02 **R 430** H 110	H03 **R 490** H 140	H04 **R 550** H 170	H06 **R 620** H 190
Tensile strength in N/mm²		350 - 450	430 - 510	490 - 580	550 - 640	620 - 710
0.2 % yield Strength in N/mm²		200	230	400	480	580
Elongation A_{L50} %		> 35	> 8	> 7	> 3	-
Vickers hardness HV		80 - 110	110 - 150	150 - 180	170 - 200	190 - 220
Electrical conductivity in % IACS		7	7	6	6	6
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	1 x s 2 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	- -

*) 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

Sundwiger Messingwerk GmbH	Sundwiger Metal (Shenzhen) Co. Ltd.
Hönnetalstraße 110 58675 Hemer Deutschland Tel. +49 2372 661-100 Fax +49 2372 661-48100 E-Mail: sales-sundwig@sundwiger-mw.com www.sundwiger-mw.com	5F, Block 25, Shatoujiao Free Trade Zone 518081 Shenzhen P.R. of China Tel. +86 755 2235 7466 Fax +86 755 25260974 E-Mail: sales@sundwiger-mw.com.cn www.sundwiger-mw.com