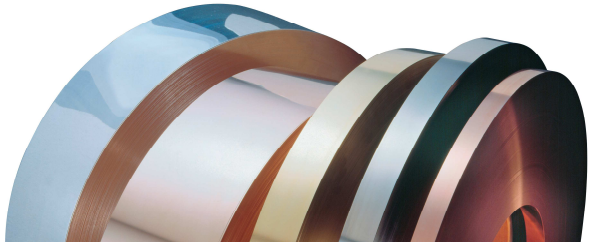
SUNDWIGER Messingwerk

Nickel Silver
NB12



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

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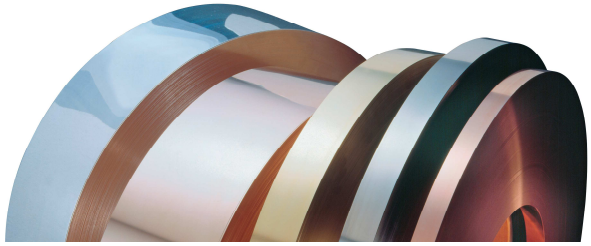

Processing Instructions	
Cold forming properties	very good
Machinability	satisfactory
Electroplating properties	very good
Hot-dip tinning properties	satisfactory
Soldering	satisfactory
Resistance welding	very good
Gas shielded arc welding	good
Laser welding	good

Available 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.

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)

Your Local Contact Person	
Europe	Asia
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We reserve the right to make alterations especially where necessitated by technical developments or changes in availability.
Please ask for the latest edition of this material data sheet.