

## 5.3. NB15 - CuNi18Zn10

Alloy Designation	
EN	CuNi18Zn10
DIN-EN	-
UNS	C73500
JIS	C7351

Chemical Composition		
Weight percentage		
Cu	Balance	%
Ni	18	%
Zn	10	%
Fe	< 0,2	%
Mn	< 0,5	%
Pb	< 0,01	%

Characteristics
NB15 is a nickel silver alloy containing 18 % nickel and 10 % zinc. The alloy has particularly good cold-forming properties and exhibits extraordinarily good deep-drawing 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. NB15 is insensitive to stress corrosion cracking. NB15 is used for deep-drawing parts and for optical goods. The alloy is registered with the U.S. EPA as antimicrobial.

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

Mechanical Properties						
Temper	Tensile Strength Rm	Yield Strength Minimum Rp0,2	Elongation Minimum A50 mm	Hardness HV*	Bendability 90°	
					gw	bw
	MPa	MPa	%	HV	rel. Bending radius R/T	
<b>R330</b>	330 .. 430	200	30	80 .. 100	0	0
<b>R400</b>	400 .. 480	230	12	105 .. 150	0	0
<b>R460</b>	460 .. 530	380	5	140 .. 180	0	0
<b>R520</b>	520 .. 610	450	3	160 .. 190	0	0
<b>R600</b>	600 .. 690	530	-	180 .. 210	0	1,5

Physical Properties			
Typical values in annealed temper at 20°C			
Density		8,7	g/cm <sup>3</sup>
Thermal expansion coefficient	20 .. 300°C	16	10-6/K
Thermal conductivity		36	W/(m*K)
Electrical conductivity	MS/m	3	MS/m
Electrical conductivity	IACS	5	%
Modulus of elasticity	GPa	125	GPa

Fabrication Properties	
Cold Forming Properties	Excellent
Machinability	Satisfactory
Electroplating Properties	Excellent
Hot Tinning Properties	Satisfactory
Soft Soldering, Brazing	Satisfactory
Resistance Welding	Excellent
Gas Shielded Arc Welding	Good
Laser Welding	Good

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