

NB15 – CuNi18Zn10

| Material Designation | | | Nominal Composition (mass content in %) | | About The Alloy |
|--|------------|-----------------|--|---------|--|
| DIN-EN Symbol | CuNi18Zn10 | | Cu | Balance | <p>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.</p> <p>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.</p> <p>NB15 is insensitive to stress corrosion cracking. NB15 is used for deep-drawing parts and for optical goods.</p> <p>The alloy is registered with the U.S. EPA as antimicrobial.</p> |
| DIN-EN | - | | Ni | 18 | |
| UNS | C73500 | | Zn | 10 | |
| JIS | C7351 | | Fe | < 0,2 | |
| | | | Mn | < 0,5 | |
| | | | Pb | < 0,01 | |
| | | | Other | < 0,2 | |
| Physical Properties | | | Typical Applications | | |
| Electrical conductivity soft | 3 | MS/m | <ul style="list-style-type: none">• Coins• Caps for quartz crystals• Electromagnetic shieldings• Deep drawing parts• Tableware• Security keys• Cutlery• Contact springs• Connector• Leaf springs for relays• Electric contacts | | |
| Thermal conductivity | 36 | W/(m·K) | | | |
| Thermal expansion coefficient ** | 16 | 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 | | | | | |

| Mechanical Properties *) | | | | | | |
|--|------------|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Temper condition | | O R 330 H 80 | H01 R 400 H 110 | H03 R 460 H 140 | H06 R 520 H 160 | H08 R 600 H 180 |
| Tensile strength in N/mm ² | | 330 - 430 | 400 - 480 | 460 - 530 | 520 - 610 | 600 - 690 |
| 0.2 % yield Strength in N/mm ² | | 200 | 230 | 380 | 450 | 530 |
| Elongation A _{L50} % | | > 30 | > 12 | > 5 | > 3 | - |
| Vickers hardness HV | | 80 - 100 | 105 - 150 | 140 - 180 | 160 - 190 | 180 - 210 |
| Electrical conductivity in % IACS | | 5 | 5 | 4 | 4 | 4 |
| Minimum radius of the bending mandrel for 90° bend and strip thickness s | | | | | | |
| 0.10 ≤ s ≤ 0.25 mm | transverse | 0 x s | 0 x s | 0 x s | 0 x s | 0 x s |
| | parallel | 0 x s | 0 x s | 0 x s | 0 x s | 1 x s |
| 0.25 < s ≤ 1.0 mm | transverse | 0 x s | 0 x s | 0 x s | 0 x s | 0 x s |
| | parallel | 0 x s | 0 x s | 0 x s | 0 x s | 2 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 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

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