

| Material Designation | | | Nominal Composition (mass content in %) | | About The Alloy | |
|--|--------|-----------------|---|-------------|---|---|
| DIN-EN Symbol | CuSn4 | | Cu | Balance | BB40 is a 4 % tin bronze which is distinguished by a very good combination of strength and electrical conductivity. It is used for connectors and current-carrying springs in contacts. | |
| DIN-EN | CW450K | | Sn | 4 | | |
| UNS | C51100 | | Zn | < 0,2 | | |
| JIS | C5111 | | Ni | < 0,2 | | |
| | | | Fe | < 0,1 | | |
| Physical Properties | | | Pb | < 0,005 | Among the 4 to 8 % tin bronzes BB40 exhibits the highest electrical conductivity. By means of an additional tempering after the cold forming process the bendability can be further improved. | |
| | | | P | 0,03 - 0,35 | | |
| | | | Other | < 0,1 | | |
| | | | Typical Applications | | | <ul style="list-style-type: none">• Connectors for electrical engineering, electronics and automotive technology• Stamped-bent parts• Contact springs• Leaf springs for relays• Slide bearings• Slide bars |
| | | | Electrical conductivity soft | 11,6 | | |
| Thermal conductivity | 86 | W/(m·K) | | | | |
| Thermal expansion coefficient ** | 17 | 10-6/K | | | | |
| Density | 8,9 | g/cm³ | | | | |
| Modulus of elasticity | 120 | GPa = kN/mm² | The alloy is registered with the U.S. EPA as Antimicrobial and with respect to Pb and Cd meets the OEKO-TEX Standard 100. | | | |
| * Reference values at room temperature ** Between 20 and 300 °C | | | | | | |

| Mechanical Properties *) | | | | | | |
|--|------------------------|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Temper condition | | O R 290 H 70 | H02 R 390 H 115 | H03 R 480 H 150 | H04 R 540 H 170 | H06 R 610 H 190 |
| Tensile strength in N/mm ² | | 290 - 390 | 390 - 490 | 480 - 570 | 540 - 630 | 610 - 690 |
| 0.2 % yield Strength in N/mm ² | | < 190 | 320 | 440 | 510 | 570 |
| Elongation A _{L50} % | | > 45 | > 20 | > 10 | > 6 | > 3 |
| Vickers hardness HV | | 70 - 105 | 115 - 155 | 150 - 180 | 170 - 200 | 190 - 220 |
| Electrical conductivity in % IACS | | 20 | 19 | 19 | 19 | 19 |
| Minimum radius of the bending mandrel for 90° bend and strip thickness s, tempered quality | | | | | | |
| 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 1 x s | 0 x s 2.5 x s |
| 0.25 < s ≤ 0.5 mm | transverse parallel | 0 x s 0 x s | 0 x s 0 x s | 0 x s 1 x s | 0 x s 2 x s | 1 x s 4 x s |
| *) Reference values | | | | | | |

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Processing Instructions

| | |
|----------------------------|------------|
| Cold forming properties | very good |
| Machinability | sufficient |
| Electroplating properties | very good |
| Hot-dip tinning properties | very good |
| Soldering | very good |
| Resistance welding | good |
| Gas shielded arc welding | good |
| Laser welding | very 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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