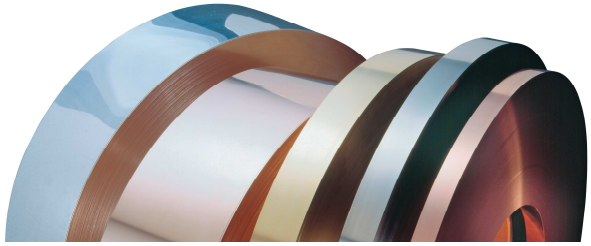
SUNDWIGER Messingwerk

High-Performance Alloys
BB01



Material Designation	
DIN-EN Symbol	CuSn0,15
DIN-EN	CW117C
UNS	C14415
JIS	C1441

Physical Properties		
Electrical conductivity soft	48	MS/m
Thermal conductivity	360	W/(m·K)
Thermal expansion coefficient **	17	10-6/K
Density	8.9	g/cm³
Modulus of elasticity	128	GPa = kN/mm²

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

Nominal Composition (mass content in %)	
Cu	Balance
Sn	0.12
Fe	< 0.02
Ni	< 0.02
Zn	< 0.1
Pb	< 0.005
P	< 0.015

Typical Applications

- Age-hardenable alloys for connectors and power transistor carriers and semiconductor devices
- Leaf springs for relays
- Stamped-bent parts
- Transistor carriers
- Connector pins
- Carriers
- Car electrics

About The Alloy

Low-alloyed copper alloys are distinguished by a high electrical conductivity. They do not reach the spring force of the bronzes, however, in comparison with pure copper, they are significantly harder. Therefore, they are predominantly used for lead frames for semiconductors, as well as for cable connectors and for the central fuse, relay and terminal box of automobiles.

BB01 is a copper alloy with a low Sn content for power semiconductors, which are used in the case of high heat development (e. g. TO 220). BB01 differs from SB02 (UNS C19400) by the higher thermal conductivity and the higher electrical conductivity. In comparison with pure copper BB01 has a higher strength while the electrical conductivity is a little lower. BB01 has excellent soldering and welding properties.

The alloy is registered with the U.S. EPA as Antimicrobial and with respect to Pb and Cd meets the OEKO-TEX Standard 100.

Mechanical Properties *)

Temper condition		O **R 250** H 60	H02 **R 300** H 85	H04 **R 360** H 105	H06 **R 420** H 120	H08 **R 460** H 135
Tensile strength in N/mm²		250 - 320	300 - 370	360 - 430	420 - 490	> 460
0.2 % yield Strength in N/mm²		200	250	320	400	410
Elongation A_{L50} %		> 15	> 4	> 3	> 2	> 2
Vickers hardness HV		60 - 90	85 - 110	105 - 130	120 - 140	> 135
Electrical conductivity in % IACS		83	83	82	82	82
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	1 x s 1 x s	1.5 x s 1.5 x s
0.25 < s ≤ 0.5 mm	transverse parallel	0 x s 0 x s	0 x s 0 x s	0.5 x s 0.5 x s	1 x s 1.5 x s	- -

*) Reference values

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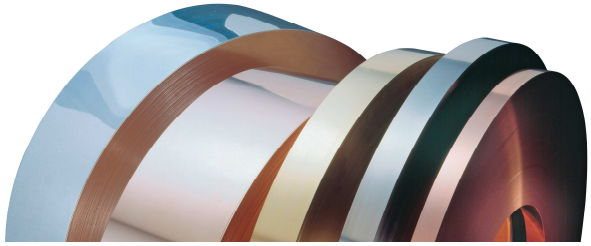

Processing Instructions	
Cold forming properties	very good
Machinability	sufficient
Electroplating properties	very good
Hot-dip tinning properties	very good
Soldering	very good
Resistance welding	good
Gas shielded arc welding	good
Laser welding	good

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	
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