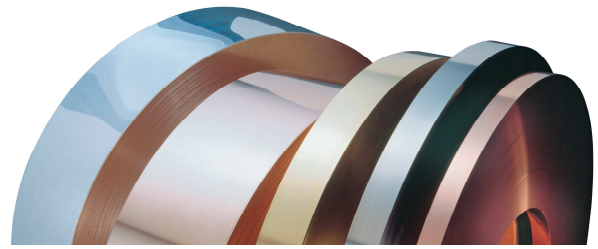


High-Performance Alloys SB01



Material Designation	
DIN-EN Symbol	CuFe0,1P
DIN-EN	-
UNS	C19210
JIS	C1921

Nominal Composition (mass content in %)	
Cu	Balance
Fe	0.1
P	0.03
Other	< 0.1

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.

SB01 is a copper alloy with a very low iron content. SB01 differs from SB02 (UNS C19400) by the higher thermal conductivity and the higher electrical conductivity. In comparison with pure copper SB01 has a higher strength while the electrical conductivity is a little lower. SB01 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.

Physical Properties		
Electrical conductivity soft	49	MS/m
Thermal conductivity	430	W/(m·K)
Thermal expansion coefficient **	17	10 ⁻⁶ /K
Density	8.9	g/cm ³
Modulus of elasticity	125	GPa = kN/mm ²
* Reference values at room temperature		
** Between 20 and 300 °C		

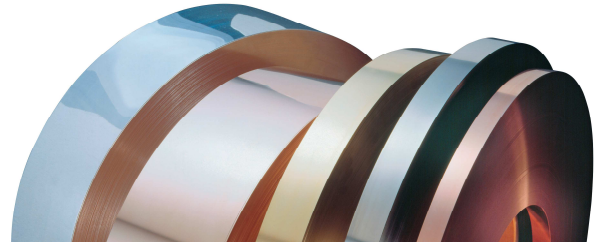
Typical Applications

- 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

Mechanical Properties *)						
Temper condition		O R 300 H 80	H02 R 360 H 100	H04 R 390 H 110	H06 R 415 H 130	H08 R 450 H 130
Tensile strength in N/mm ²		300 - 380	360 - 440	390 - 450	415 - 480	450 - 520
0.2 % yield Strength in N/mm ²		< 300	280	330	380	430
Elongation A _{LS0} %		> 15	> 6	> 3	> 3	> 2
Vickers hardness HV		80 - 110	100 - 130	110 - 140	120 - 145	130 - 160
Electrical conductivity in % IACS		85	85	84	84	84
Minimum radius of the bending mandrel for 90° bend and strip thickness s, tempered quality						
0.10 ≤ s ≤ 0.25 mm	transverse	0 x s	0 x s	1 x s	1 x s	1.5 x s
	parallel	0 x s	0 x s	1 x s	1 x s	1.5 x s
0.25 < s ≤ 0.5 mm	transverse	0 x s	0 x s	1 x s	1 x s	-
	parallel	0 x s	0 x s	1 x s	1.5 x s	-

*) Reference values

High-Performance Alloys SB01



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	
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.