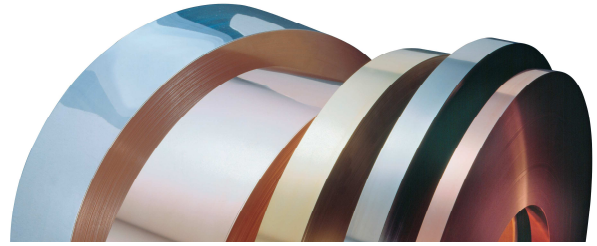


## High-Performance Alloys

### BB05xi



Material Designation	
DIN-EN Symbol	(CuSn0,5Ni)
DIN-EN	-
UNS	C19024
JIS	-

Physical Properties		
Electrical conductivity soft	36	MS/m
Thermal conductivity	250	W/(m·K)
Thermal expansion coefficient **	17	10 <sup>-6</sup> /K
Density	8.9	g/cm <sup>3</sup>
Modulus of elasticity	126	GPa = kN/mm <sup>2</sup>
* Reference values at room temperature		
** Between 20 and 300 °C		

Nominal Composition (mass content in %)	
Cu	Balance
Sn	0.6
Zn	< 0.05
Ni	< 0.4
Fe	< 0.02
Pb	< 0.005
P	0.008 - 0.05
Other	< 0.1

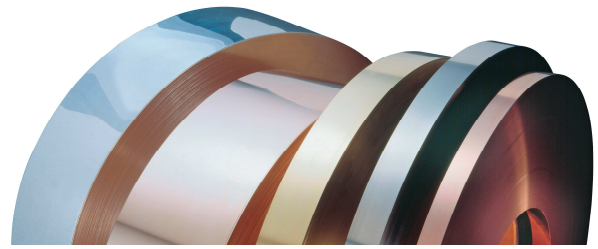
Typical Applications
----------------------

About The Alloy
BB05xi is a low-alloyed copper alloy which exhibits an electrical conductivity similar to CuFe2P. Small additions of xi improve softening. The alloy does not reach the spring force of the bronzes, however, in comparison with pure copper, the alloy is significantly harder and in comparison to CuFe2P, which is very often used in a hot dip tinned condition for lead frames for applications in anti-skid, ESP and transmission control systems, BB05xi can easily be recycled.
BB05xi has excellent soldering and welding properties, especially Laser welding. The alloy is an ideal solid solution alloy. There is no Zn evaporation during welding or other influence of precipitates on the laser beam.
BB05xi meets with respect to Pb and Cd the OEKO-TEX Standard 100.

Mechanical Properties *)						
Temper condition		O R 250 H 50	H02 R 330 H 90	H04 R 380 H 115	H06 R 440 H 120	H08 R 480 H 140
Tensile strength in N/mm <sup>2</sup>		250 - 320	330 - 400	380 - 460	440 - 500	> 480
0.2 % yield Strength in N/mm <sup>2</sup>		100	280	350	400	450
Elongation A <sub>LS0</sub> %		> 30	> 8	> 5	> 4	> 2
Vickers hardness HV		50 - 80	90 - 110	115 - 135	120 - 145	> 140
Electrical conductivity in % IACS		62	62	61	61	60
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	0 x s	1 x s	1.5 x s
	parallel	0 x s	0 x s	0 x s	1 x s	1.5 x s
0.25 < s ≤ 0.5 mm	transverse	0 x s	0 x s	0.5 x s	1 x s	-
	parallel	0 x s	0 x s	0.5 x s	1.5 x s	-

\*) Reference values

## High-Performance Alloys BB05xi



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
<p><b>SUNDWIGER</b> Messingwerk</p> <p>Sundwiger Messingwerk GmbH</p> <p>Hönnetalstraße 110 58675 Hemer Deutschland Tel. +49 2372 661-100 Fax +49 2372 661-48100 E-Mail: sales-sundwig@sundwiger-mw.com www.sundwiger-mw.com</p>	<p><b>SUNDWIGER</b> Messingwerk</p> <p>Diehl Metall (Shenzhen) Co. Ltd.</p> <p>5F, Block 25, Shatoujiao Free Trade Zone 518081 Shenzhen P.R. of China Tel. +86 755 2235 7466 Fax +86 755 25260974 E-Mail: sales@sundwiger-mw.com.cn www.sundwiger-mw.com</p>

The information given in this material data sheet, which in any case provides no guarantee of particular characteristics, has been compiled to the best of our knowledge but is given without any obligation on our part. Our liability is determined solely by the individual contract terms, in particular by our general conditions of sale.

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.