

BB21 – CuSn2Zn2Fe

Material Designation			Nominal Composition (mass content in %)		About The Alloy
DIN-EN Symbol	CuSn2Zn2Fe		Cu	Balance	BB21 is a 2% phosphor bronze with additions of 2.2% Zn and 0.1% Fe which exhibits a good combination of strength, electrical conductivity and metal value. It is used for connectors and current-carrying springs in contacts.
DIN-EN	-		Sn	2	
UNS	C50725		Zn	2,2	
JIS	-		Ni	< 0,2	
			Fe	0,1	
			Pb	< 0,005	Tin bronze with about 2% Sn exhibit a higher electrical conductivity compared to the standard bronzes. Due to coherent precipitates BB21 has improved strength. Although the tin content is reduced, mechanical properties are similar to CuSn4. By means of an additional tempering after the cold forming process the bendability can be further improved.
			P	0,028 - 0,04	
			Other	< 0,1	
Physical Properties			Typical Applications		The alloy is registered with the U.S. EPA as Antimicrobial and with respect to Pb and Cd meets the OEKO-TEX Standard 100.
Electrical conductivity soft	19	MS/m	<ul style="list-style-type: none">• Connectors for electrical engineering, electronics and automotive technology• Stamped-bent parts• Contact springs• Leaf springs for relays		
Thermal conductivity	150	W/(m·K)			
Thermal expansion coefficient **	17,5	10-6/K			
Density	8,9	g/cm³			
Modulus of elasticity	120	GPa = kN/mm²			
* Reference values at room temperature					
** Between 20 and 300 °C					

Mechanical Properties *)

Temper condition	O R 290 H 70	H02 R 390 H 120	H03 R 480 H 150	H04 R 540 H 170	H06 R 610 H 190
Tensile strength in N/mm ²	290 - 390	390 - 500	480 - 555	510 - 600	600 - 665
0.2 % yield strength in N/mm ²	< 190	280	430	470	575
Elongation A _{L50} %	> 40	> 20	> 10	> 6	> 3
Vickers hardness HV	70 - 100	120 - 160	150 - 185	170 - 200	190 - 220
Electrical conductivity in % IACS	32	31	31	31	31
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	0 x s
	parallel	0 x s	0 x s	0 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	1 x s	2 x s
*) Reference values					

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.

BB21 – CuSn2Zn2Fe

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

Europe

Asia



Sundwiger Messingwerk GmbH

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

Sundwiger Metal (Shenzhen) Co. Ltd.

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

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.