

BB20 – CuSn2Fe0,1P

Material Designation			Nominal Composition (mass content in %)		About The Alloy
DIN-EN Symbol	CuSn2Fe0,1P		Cu	Balance	BB20 is a 2% phosphor bronze with additions of 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	C50715		Zn	< 0,2	
JIS	-		Ni	< 0,2	
Physical Properties			Fe	0,1	
			Pb	< 0,005	
			P	0,028 - 0,04	
			Other	< 0,1	
			Typical Applications		
Electrical conductivity soft	20	MS/m	<ul style="list-style-type: none">Connectors for electrical engineering, electronics and automotive technologyStamped-bent partsContact springsLeaf springs for relaysSlide bearingsSlide bars		Tin bronze with about 2% Sn exhibit a higher electrical conductivity compared to the standard bronzes. Due to coherent precipitates BB20 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.
Thermal conductivity	200	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					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 290 H 70	H02 R 390 H 120	H03 R 480 H 150	H04 R 510 H 170	H06 R 600 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	290	395	440	550
Elongation A _{L50} %		> 40	> 16	> 10	> 6	> 3
Vickers hardness HV		70 - 100	120 - 160	150 - 185	170 - 200	190 - 220
Electrical conductivity in % IACS		34	33	33	33	33
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	0 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 x s	0.5 x s	1 x s
	parallel	0 x s	0 x s	1 x s	1 x s	2 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

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

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