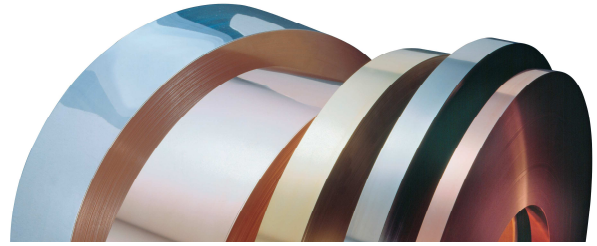


Special Alloys

SB23



Material Designation	
DIN-EN Symbol	CuZn23Al3Co
DIN-EN	CW703R
UNS	C68800
JIS	-

Physical Properties		
Electrical conductivity soft	10	MS/m
Thermal conductivity	78	W/(m·K)
Thermal expansion coefficient **	18.2	10 ⁻⁶ /K
Density	8.2	g/cm ³
Modulus of elasticity	115	GPa = kN/mm ²
* Reference values at room temperature		
** Between 20 and 300 °C		

Nominal Composition (mass content in %)	
Cu	Balance
Zn	23
Al	3.4
Co	0.4
Fe	< 0.05
Ni	< 0.1
Pb	< 0.005
Other	< 0.1

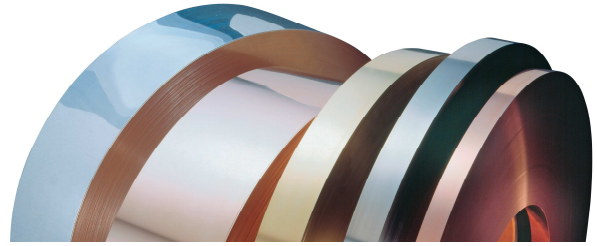
Typical Applications
<ul style="list-style-type: none"> • Carriers • Connectors • Insulation displacement contacts (IDCs) • Contact springs • Security keys

About The Alloy
<p>SB23, a nickel-free material of the CuZn type (brass) alloyed with aluminium and cobalt, is mainly used for high-strength electrical connection parts and spring elements.</p> <p>SB23 is an alloy having a strength range between copper-beryllium and the work-hardening copper alloys such as tin bronze, nickel silver and brass.</p> <p>According to the customer's request we manufacture SB23 in the tempers soft, cold-worked or tempered. Tempering (approx. 250 °C/1 h holding time) of the hard strip results in a strength increase of approx. 4 to 8 %. However, as this heat treatment impairs the bendability it is also possible to temper the parts only after the cold forming process (bending).</p> <p>The alloy is registered with the U.S. EPA as Antimicrobial.</p>

Mechanical Properties *)						
Temper condition		O R 540 H 150	H01 R 600 H 175	H02 R 660 H 190	H04 R 740 H 210	H06 R 820 H 230
Tensile strength in N/mm ²		540 - 600	600 - 700	660 - 750	740 - 830	820 - 910
0.2 % yield Strength in N/mm ²		430	510	580	660	780
Elongation A _{LS0} %		> 30	> 13	> 8	> 3	> 2
Vickers hardness HV		150 - 180	175 - 210	190 - 220	210 - 240	230 - 260
Electrical conductivity in % IACS		17	17	17	16	15
Minimum radius of the bending mandrel for 90° bend and strip thickness s						
0.10 ≤ s ≤ 0.25 mm	transverse	0 x s	0 x s	0 x s	1 x s	3 x s
	parallel	0 x s	0 x s	0 x s	1.5 x s	10 x s
0.25 < s ≤ 1.0 mm	transverse	0 x s	0 x s	0 x s	2 x s	-
	parallel	0 x s	0 x s	1 x s	2 x s	-
*) Reference values						

Special Alloys

SB23



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

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>SUNDWIGER 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>SUNDWIGER 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.