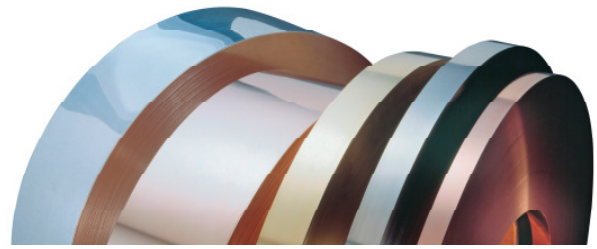


## Special Alloys SB69



Material Designation	
DIN-EN Symbol	CuSn3Zn9
DIN-EN	CW454K
UNS	C42500
JIS	-
The Miller Company	C425

Physical Properties		
Electrical conductivity soft	14.5	MS/m
Thermal conductivity	120	W/(m·K)
Thermal expansion coefficient **	18	10 <sup>-6</sup> /K
Density	8.8	g/cm <sup>3</sup>
Modulus of elasticity	120	GPa = kN/mm <sup>2</sup>

\* Reference values at room temperature

\*\* Between 20 and 300 °C

Nominal Composition (mass content in %)	
Cu	Balance
Sn	2.5
Zn	9
Ni	< 0.2
Fe	< 0.05
Pb	< 0.005
P	0.03 - 0.2
Other	< 0.1

### Typical Applications

- Carriers
- Connectors
- Insulation displacement contacts (IDCs)
- Contact springs
- Security keys

### About The Alloy

SB69 is a multi-alloy bronze in which a part of the tin content is replaced by zinc. The tensile strength of SB69 is a little lower than that of BB60 (CuSn6), however the electrical conductivity is 50 % higher than that of BB60.

Similar to bronze, SB69 is used as a material for current-carrying spring elements.

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	H02	H03	H04	H06	H08
	R 320 H 80	R 380 H 110	R 430 H 140	R 510 H 160	R 580 H 180	R 660 H 200
Tensile strength in N/mm <sup>2</sup>	320 - 380	380 - 430	430 - 520	510 - 600	580 - 690	660 - 740
0.2 % yield Strength in N/mm <sup>2</sup>	250	200	330	430	520	610
Elongation A <sub>L50</sub> %	> 25	> 16	> 6	> 5	> 2	-
Vickers hardness HV	80 - 110	110 - 140	140 - 170	160 - 190	180 - 210	200 - 230
Electrical conductivity in % IACS	25	24	24	23	23	22

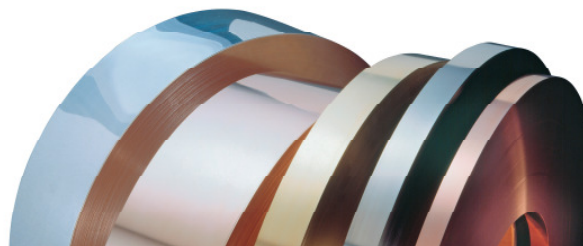
Minimum radius of the bending mandrel for 90° bend and strip thickness s, tempered quality

0.10 ≤ s ≤ 0.25 mm	transverse	0 x s	0 x s	0 x s	0 x s	0.5 x s	2.5 x s
	parallel	0 x s	0 x s	0 x s	0 x s	1.5 x s	7 x s
0.25 < s ≤ 1.0 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	0.5 x s	1 x s	3 x s	-

\*) Reference values

## Special Alloys

### SB69



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

**DIEHL**  
Metal Applications

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Metal Applications

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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.