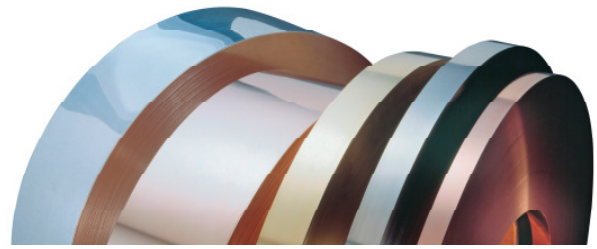


# High-Performance Alloys

## SB22



Material Designation	
DIN-EN Symbol	CuNi2Si
DIN-EN	CW111C
UNS	C70260
UNS	C64700
JIS	-
The Miller Company	-

Physical Properties		
Electrical conductivity soft	32	MS/m
Thermal conductivity	250	W/(m·K)
Thermal expansion coefficient **	17	10 <sup>-6</sup> /K
Density	8.8	g/cm <sup>3</sup>
Modulus of elasticity	130	GPa = kN/mm <sup>2</sup>
Stress relaxation:		
H Temper condition up to	125	°C fair
TM Temper condition up to	150	°C fair
* Reference values at room temperature ** Between 20 and 300 °C		

Nominal Composition (mass content in %)	
Cu	Balance
Ni	1.9
Si	0.5
Zn	0.3
Fe	< 0.1
Pb	< 0.005
P	0.01
Other	< 0.1

Typical Applications
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**About The Alloy**

SB22 is an age-hardening CuNi2Si alloy, higher alloyed in comparison with SB21, for current-carrying formed parts.

It has an  $\alpha$ -structure with very fine precipitations and recommends itself both for lead frames which require a high rigidity of the pins and for connectors with high demands on the electrical conductivity, strength, thermal load and relaxation behaviour.

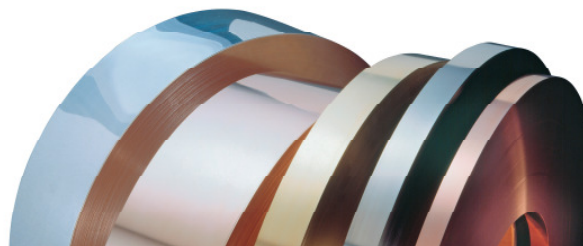
In addition, SB22 can also be used for current-carrying formed parts and contact springs due to its good fatigue strength, forming and spring properties.

The alloy is registered with the U.S. EPA as Antimicrobial.

Mechanical Properties *)							
Temper condition		O R 360 H 100	H02 R 420 H 130	H03 R 460 H 140	TM00 ** R 580 H 170	TM10 ** R 600 H 180	TM03 ** R 620 H 190
Tensile strength in N/mm <sup>2</sup>		360 - 430	420 - 480	460 - 530	580 - 650	600 - 670	620 - 690
0.2 % yield Strength in N/mm <sup>2</sup>		250	380	430	470	570	580
Elongation A <sub>L50</sub> %		> 12	> 9	> 7	> 12	> 7	> 10
Vickers hardness HV		100 - 130	130 - 150	140 - 160	170 - 200	180 - 220	190 - 220
Electrical conductivity in % IACS		55	55	55	45	40	48
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	0 x s	0.5 x s	0 x s
	parallel	0 x s	0.5 x s	0.5 x s	0.5 x s	1 x s	1 x s
0.25 < s ≤ 0.8 mm	transverse	0 x s	0 x s	0.5 x s	0.5 x s	-	1 x s
	parallel	0 x s	0.5 x s	1 x s	1 x s	-	1.5 x s
*) Reference values    **) mill aged							

## High-Performance Alloys

### SB22



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	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	USA	Asia

**DIEHL**  
Metal Applications

**DIEHL**  
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.