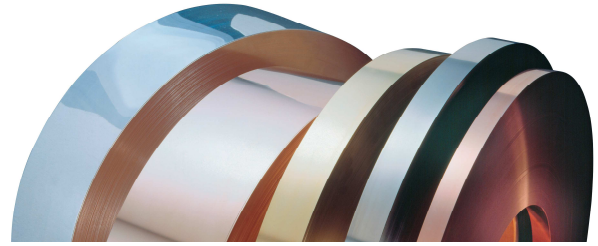


## High-Performance Alloys SB28



Material Designation	
DIN-EN Symbol	CuNi3SiMg
DIN-EN	-
UNS	C70250
JIS	-

Nominal Composition (mass content in %)	
Cu	Balance
Ni	3.0
Si	0.6
Mg	0.1
Zn	< 0.3
Fe	< 0.1
Pb	< 0.005
Other	< 0.1

**About The Alloy**

SB28 is an age-hardening CuNi3Si alloy, that, in comparison with SB22, has higher contents of nickel and silicon with additions of magnesium in order to be able to adjust a particularly high strength and stress relaxation resistance.

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 particularly high demands on strength, electrical conductivity, thermal load and relaxation behaviour.

Physical Properties		
Electrical conductivity soft	25	MS/m
Thermal conductivity	190	W/(m·K)
Thermal expansion coefficient **	17, 6	10-6/K
Density	8.8	g/cm <sup>3</sup>
Modulus of elasticity	132	GPa = kN/mm <sup>2</sup>
Stress relaxation:		
TM Temper condition up to	175	°C fair
* Reference values at room temperature ** Between 20 and 300 °C		

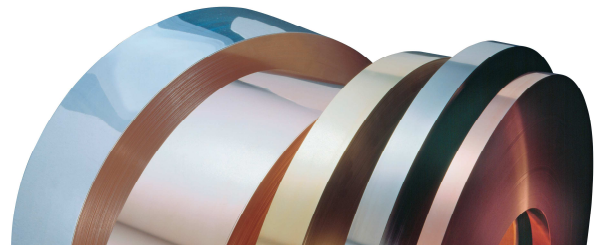
- Typical Applications**
- Age-hardenable alloys for connectors and power transistor carriers and semiconductor devices
  - Leaf springs for relays
  - Stamped-bent parts
  - Transistor carriers
  - Connector pins
  - Carriers
  - Car electrics

In addition, SB28 can also be used for current-carrying formed parts and contact springs due to its good fatigue strength, forming and spring properties. The alloy can be surface-refined to various procedures

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

Mechanical Properties *)					
	TM00 **	TM02 **	TM03 **	TM04 **	
Temper condition	<b>R 620</b> H 180	<b>R 650</b> H 200	<b>R 690</b> H 220	<b>R 710</b> H 225	
Tensile strength in N/mm <sup>2</sup>	620 - 750	650 - 780	690 - 810	710 - 830	
0.2 % yield Strength in N/mm <sup>2</sup>	500	585	655	700	
Elongation A <sub>L50</sub> %	> 12	> 9	> 7	> 4	
Vickers hardness HV	180 - 230	200 - 240	220 - 250	225 - 255	
Electrical conductivity in % IACS	40	40	40	40	
Minimum radius of the bending mandrel for 90° bend and strip thickness s					
0.10 ≤ s ≤ 0.50 mm	transverse	0 x s	1 x s	1.5 x s	2.0 x s
	parallel	0 x s	1 x s	1.5 x s	2.0 x s
*) Reference values    **) mill aged					

## High-Performance Alloys SB28



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 strip 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
Strip in reel form with coil weight of up to 1500 kg
Multipancake up to 2.5 t
Hot-dip tinned strip
Profiled strip
Electroplated strip (tin, nickel)

Your Local Contact Person	
Europe	Asia
<p><b>SUNDWIGER</b> 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><b>SUNDWIGER</b> 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>

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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.