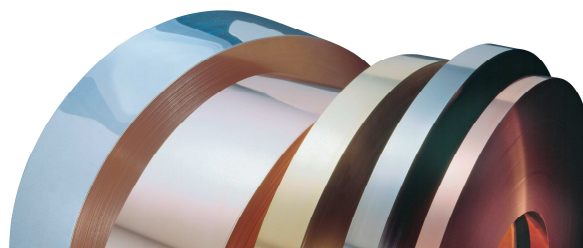


High-Performance Alloys

SB28



Material Designation	
DIN-EN Symbol	CuNi3SiMg
DIN-EN	-
UNS	C70250
JIS	-
The Miller Company	C7025

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 α -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.

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.

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 ³
Modulus of elasticity	132	GPa = kN/mm ²
Stress relaxation:		
TM Temper condition up to	175	°C fair
* Reference values at room temperature ** Between 20 and 300 °C		

Typical Applications

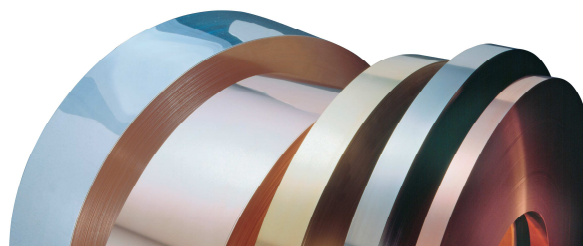
- Age-hardenable alloys for connectors and power transistor carriers and semiconductor devices
- Leaf springs for relays
- Stamped-bent parts
- Transistor carriers
- Connector pins
- Carriers
- Car electrics

Mechanical Properties *)

	TM00 **	TM02 **	TM03 **	TM04 **
Temper condition	R 620 H 180	R 650 H 200	R 690 H 220	R 710 H 225
Tensile strength in N/mm ²	620 - 750	650 - 780	690 - 810	710 - 830
0.2 % yield Strength in N/mm ²	500	585	655	700
Elongation A _{L50} %	> 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
	parallel	0 x s	1 x s	1.5 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	USA	Asia

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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.