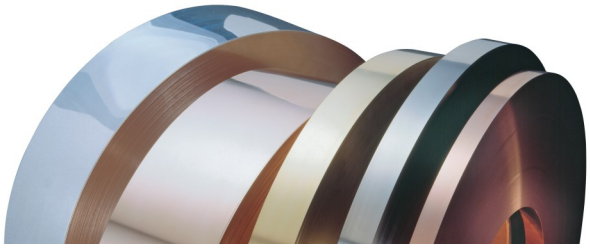
SUNDWIGER Messingwerk

High-Performance Alloys
SB28



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

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/cm³
Modulus of elasticity	132	GPa = kN/mm²
Stress relaxation:		
TM Temper condition up to	175	ºC fair

* Reference values at room temperature
** Between 20 and 300 °C

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

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

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.

Mechanical Properties *)

Temper condition		TM00 ** **R 620** H 180	TM02 ** **R 650** H 200	TM03 ** **R 690** H 220	TM04 ** **R 710** H 225
Tensile strength in N/mm²		620 - 750	650 - 780	690 - 810	710 - 830
0.2 % yield Strength in N/mm²		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 parallel	0 x s 0 x s	1 x s 1 x s	1.5 x s 1.5 x s	2.0 x s 2.0 x s

*) Reference values **) mill aged

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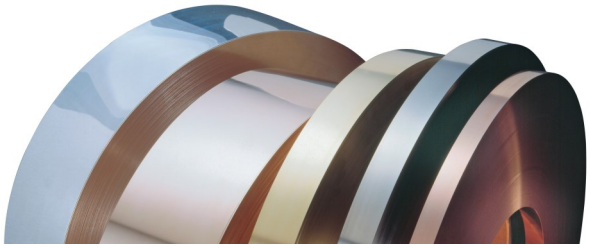

Processing Instructions	
Cold forming properties	very good
Machinability	satisfactory
Electroplating properties	good
Hot-dip tinning properties	good
Soldering	good
Resistance welding	good
Gas shielded arc welding	good
Laser welding	good

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		
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