

Alloy Designation	
EN	CuNi3Si
<b>DIN CEN/TS 13388</b>	
UNS	C70250

Chemical Composition (Balance)		
Weight percentage		
Cu	Rest	%
Ni	3	%
Si	0.65	%
Mg	0.15	%

**Characteristics**

**CuNi3Si** is an optimized CuNiSi alloy that can be hardened by cold forming and by precipitation of NiSi-phases during a heat treatment. It has excellent bendability, excellent hot and cold forming properties, a high strength and a good corrosion resistance.

Due to the NiSi-precipitations the relaxation properties, even at temperatures up to 150 °C are excellent. In combination with a tin coating even at temperatures around 150 °C (3.000h) the tin coating does not peel off. The electrical and thermal conductivity is good. Welding, soldering and brazing properties are good too.

**Main Applications**

**Automotive** Switches and Relays, Contacts, Connectors, Terminals.  
**Electrical** Switches and Relays, Contacts, Connectors, Terminals, Components for the electrical industry, Stamped parts, Semiconductor Components.

Mechanical Properties (EN 1652)							
Temper		Tensile Strength	Yield Strength	Elongation	Hardness	Bending	
		R <sub>m</sub>	Minimum R <sub>p0.2</sub>	Minimum A <sub>50mm</sub>	HV (only for information)	90° gw rel. Bending Radius R/T	bw
		MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
<b>R540</b>	TF00	540 .. 640	440	18	150 .. 200	0	0
<b>R620</b>	TM00	620 .. 760	500	10	180 .. 240	0	0
<b>R650</b>	TM02	650 .. 825	585	7	190 .. 250	1	1
<b>R690</b>	TM03	690 .. 860	655	5	210 .. 250	1.5	1.5
<b>R760</b>	TM05	760 .. 840	720	3	220 .. 260	3	3
<b>R840 *</b>	TM08	840 .. 920	810	1	240 .. 275	2.5 **	3.5 **
<b>R900 *</b>	TM10	900 .. 1000	880	1	260 .. 300	4 **	8 **

\* only for thicknesses between 0.10 and 0.50 mm (other thicknesses on request) \*\* Bending radii with maximum bending width 5 x t

Physical Properties			
Typical values in annealed temper at 20 °C			
Density		8.87	g/cm <sup>3</sup>
Thermal expansion coefficient	20 .. 300 °C	17.6	10 <sup>-6</sup> /K
Specific heat capacity		0.399	J/(g·K)
Thermal conductivity		190	W/(m·K)
Electrical conductivity	MS/m	23	MS/m
Electrical conductivity	IACS	40	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	3	10 <sup>-3</sup> /K
Modulus of elasticity	GPa	130	GPa

Fabrication Properties *	
Cold Forming Properties	Good
Machinability (Rating 20)	Less suitable
Electroplating Properties	Good
Hot Tinning Properties	Good
Soft Soldering, Brazing	Good
Resistance Welding	Fair
Gas Shielded Arc Welding	Good
Laser Welding	Less suitable

\* For more details call our technical service

Due to continuous improvements within our production process, the details given in our brochure cannot be guaranteed. We reserve the right to update or change our products without prior notice. We recommend that you seek confirmation of our product details / specifications before committing to specific alloys.