

Alloy Designation	
EN	CuNi2Si / CW111C
DIN	CuNi2Si
UNS	C70260 ASTM B422 B888
JIS	/

Chemical Composition		
Ni	1.0 - 3.0	%
Si	0.2 - 0.7	%
Cu	Remainder	%
P	max. 0.01	

Characteristics
CuNi2Si is a precipitation-strengthened Cu–Ni–Si alloy with high strength and hardness and excellent corrosion and wear resistance, including resistance to stress-corrosion and hydrogen embrittlement. It also features low magnetic permeability, spark resistance, good electrical/thermal conductivity for a non-ferrous metal, and reliable bending and stress-relaxation performance.

Main Applications
· Components for the electrical industry · Stamped parts · Semiconductor components
· Connectors · Relay springs · Railway overhead lines

Physical Properties (Reference values at room temperature)		
Density	g/cm ³	8.86
Electrical conductivity	IACS%(20°C)*	43
Modulus of elasticity	KN/mm ²	130
Coefficient of thermal expansion	10 ⁻⁶ /K	18
Thermal conductivity	W/(m*K)	190

*value for the lowest temper class

Mechanical Properties							
TEMPER		Tensile Strength Mpa	Yield Strength Mpa	Elongation %	Hardness HV (only for reference)	Bending Test(90°) GW BW	
Electrical Industry							
R550	TM00	550 - 690	min. 450	min. 10	(160 - 200)	0.5	0.5
R640	TM02	620 - 760	min. 585	min. 4	(170 - 230)	0.5	1
R690	TM03	720 - 825	min. 655	min. 2	(200 - 250)	1.5	2
Railway Industry							
H01		320 - 420	-	min. 25	(min. 95)	1	1
H04		480 - 600	-	min. 15	(140 - 200)	1	1

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