

C70250 (CuNi3SiMg) 18 08 US

Comparable standards: UNS C70250
 Aurubis designations: C7025 • PNA370

Description CuNi3SiMg is a precipitation-hardened copper alloy combining moderate electrical conductivity with high strength and good stress relaxation resistance. The alloy has excellent spring properties, good corrosion resistance in industrial atmospheres and is resistant against stress corrosion cracking.

Composition

Cu*	Ni**	Si	Mg	Zn	Pb	Fe	Mn
[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
rem	2.2 – 4.2	0.25 – 1.2	0.05 – 0.30	≤ 1.0	≤ 0.05	≤ 0.20	≤ 0.10

*) Cu + sum of named elements 99.5 % min
 **) Ni value included Co

Physical properties

Melting point	Density	Specific heat cap. at 20°C	Electrical cond.	Thermal cond. at 20°C	Mod. of elasticity	Coef. of therm exp. at 20°C
[°F] [°C]	[lb/in ³] [g/cm ³]	[Btu/lb°F] [kJ/kgK]	[%IACS] [MS/m]	[Btu/ft h °F] [W/mK]	x1000 ksi [GPa]	[10 ⁻⁶ /°F] [10 ⁻⁶ /K]
1944 1062	0.318 8.82	0.09 0.38	40 23.4	98 169	19 131	9.8 17.6

Mechanical properties

Tempers	Tensile strength Rm [ksi] [MPa]	Yield strength Rp0.2 [ksi] [MPa]	Elongation 2'' [%]	Hard-ness HV [-]	Min bend ratio 90°		Min. bend ratio 180°	
					GW	BW	GW	BW
TM00	90-110 620-760	65-90 450-620	≥ 10	200-230	1.0	0.5	1.0	1.0
TM02	95-120 655-830	85-110 590-760	≥ 7	210-240	1.5	0.5	1.5	1.0
TM03	100-125 690-860	95-120 655-830	≥ 5	225-245	1.5	1.0	1.5	1.5

Other tempers are available upon request.
 GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction

Fabrication properties

Cold formability	good
Machinability	not recommended
Soldering	fair
Resistance welding	fair
Gas shielded arc welding	good

Typical uses

Contact Springs, Lead Frames, Electronic Connectors, Automotive Electronic Connectors, Automotive Electrical Connectors

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