

C70260 (CuNi2Si0.4) 18 08 US

Comparable standards: UNS C70260 • EN CW111C
 Aurubis designations: C7026

Description CuNi2Si0.4 combines excellent stress relaxation resistance with high strength and high conductivity. The relatively low alloy additions in combination with Aurubis process knowledge ensure consistent combination of mechanical properties, conductivity and good formability. The different tempers are unique and suitable for specific applications. TM00, TM02 and TM0S for signal and power applications demanding excellent formability, high strength and good stress relaxation resistance. TM0S with enhanced conductivity. TM03 is developed for high strength signal applications.

Composition

Cu*	Ni**	Si	P
[%]	[%]	[%]	[%]
rem.	1.0 - 3.0	0.20 - 0.7	0.01 max

*) Cu + sum of named elements 99.5% min, **) Including Co

Physical properties

	Temper	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]
At max 0.04'' (1.00 mm)	TM00-TM03	1989 1087	0.320 8.9	0.09 0.38	≥40 ≥23.4	90 156	19 130	10.0 18.0
	TM0S	1989 1087	0.320 8.9	0.09 0.38	≥50 ≥29.2	112 195	19 130	10.0 18.0
Below 0.006'' (0.15 mm)	TM02-TM03	1989 1087	0.320 8.9	0.09 0.38	≥38 ≥22.2	90 156	19 130	10.0 18.0

Mechanical properties

	Temper	Tensile strength Rm	Yield strength Rp0.2	Elongation 2''	Hard-ness HV	Min bend ratio 90°		Min. bend ratio 180°	
		[ksi] [MPa]	[ksi] [MPa]			[%]	[-]	GW	BW
		At max 0.04'' (1.00 mm)	TM00	85-95 586-655	≥ 65 ≥ 448	≥ 10	170-200	0.5	0.5
TM02	98-108 676-745		≥ 90 ≥ 620	≥ 5	200-230	0.5	1.0	1.0	1.5
TM03	105-115 724-793		≥ 100 ≥ 690	≥ 1	220-250	1.5	2.0	1.5	2.0
TM0S	90-105 620-724		≥ 85 ≥586	≥ 6	200-230	0.5	0.5	1.0	1.0
Below 0.006'' (0.15 mm)	TM02	95-105 655-724	≥ 85 ≥ 586	≥ 4	190-220	0.5	1.0	1.0	1.5
	TM03	98-108 676-745	≥ 95 ≥ 655	≥ 1	210-240	1.5	2.0	1.5	2.5

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

This leaflet is for general information only. No claims can be derived from it unless there is evidence of intent or gross negligence. The data given are no warranty that the product is of a specified quality and they cannot replace expert advice or the customer's own test.

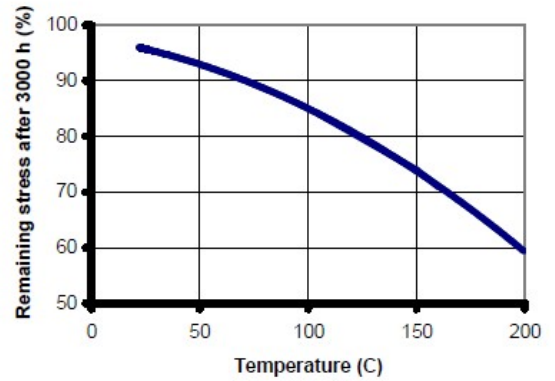
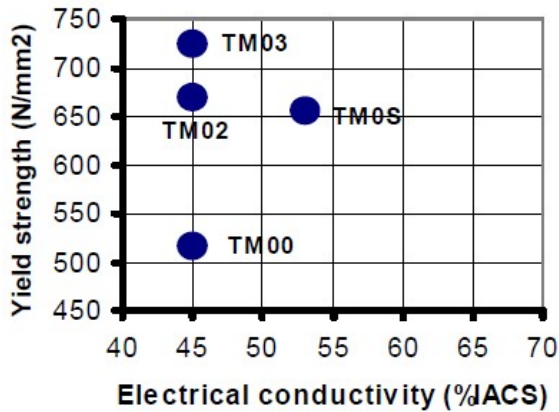
Fabrication properties

Electrical and thermal conductivity	very good
Stress relaxation resistance	excellent
Spring properties	excellent
Formability	good

The alloy contains Ni. Ni plated scrap can therefore be recycled.

Typical properties and stress relaxation resistance

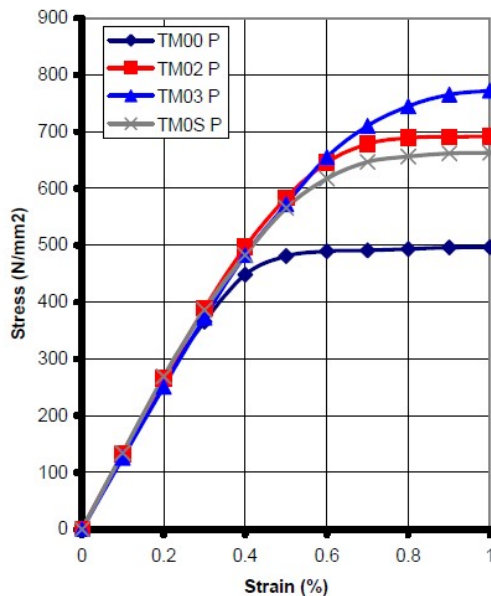
Temp for min 70 % remaining stress after 3000 h (°C)
 TM00, TM02 & TM0S max 160 °C. TM03 max 150 °C



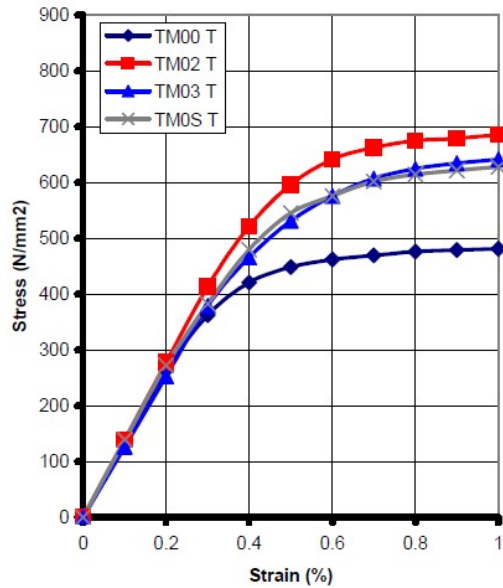
Stress Strain curves

Typical properties for material at 0.010" (0.25 mm)

Parallel



Transverse



This leaflet is for general information only. No claims can be derived from it unless there is evidence of intent or gross negligence. The data given are no warranty that the product is of a specified quality and they cannot replace expert advice or the customer's own test.