

C19040 (CuSn1.2Ni0.8P0.07)

18 08 US

Comparable standards: UNS C19040
 Aurubis designations: CAC5*

*CAC5 is a trademark licensed by Kobelco

Description CAC5 is an alloy developed by Kobe Steel to meet the requirements for the next generation automotive terminals. Downsizing and for some applications increased temperature demands an excellent combination of formability, stress relaxation resistance, conductivity and strength. CAC5 is designed for small terminals with complicated forming. The good formability makes it possible to use tight 180 degree bends without risk for cracking. The excellent stress relaxation resistance retains high stable normal force. CAC5 is produce by Aurubis under license from Kobe Steel.

Composition

Cu	Ni	Sn	P
[%]	[%]	[%]	[%]
min. 97.5	0.7 - 0.9	1.0 - 2.0	0.02 -0.09

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]
1976 1080	0.32 8.9	0.09 0.38	≥ 35 ≥ 21	96 166	19 130	9.7 17.5

Mechanical properties

Temper	Tensile strength Rm	Yield strength Rp0.2	Elongation 2'' min	Hard-ness HV	min bend ratio 90°		min. bend ratio 180°	
					GW	BW	GW	BW
	[ksi] [MPa]	[ksi] [MPa]	[%]	[-]				
H04	72-86 500-590	70 min 480 min	7	155-180	0.0	0.0	0.0	0.0
H06	78-91 540-630	75 min 520 min	6	160-195	0.2	0.2	0.5	0.5

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

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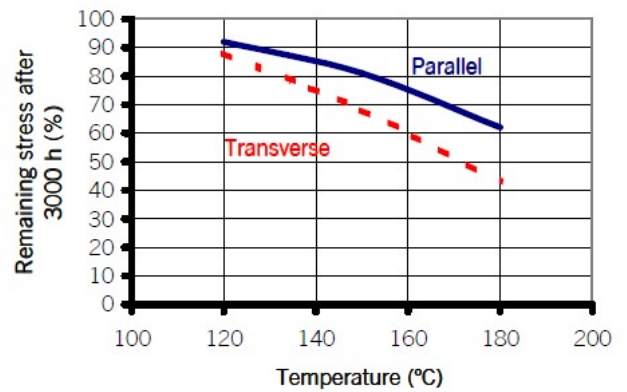
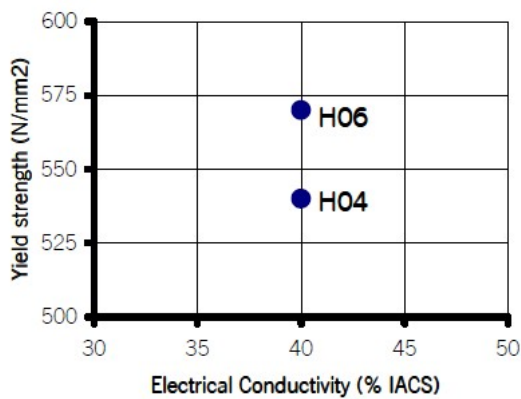
Fabrication properties

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

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

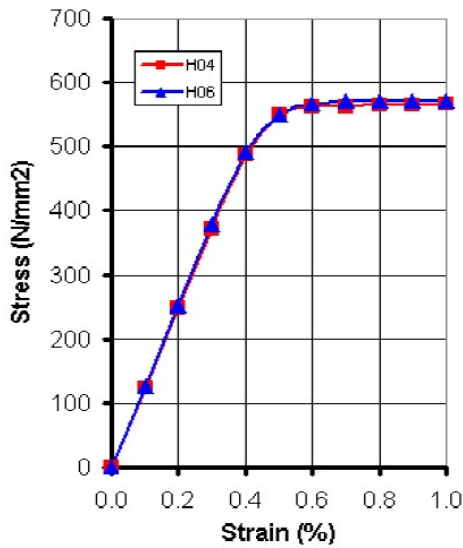
Stress relaxation resistance

Temp for min 70 % remaining stress after 3000 h (°C)
at least 150 °C

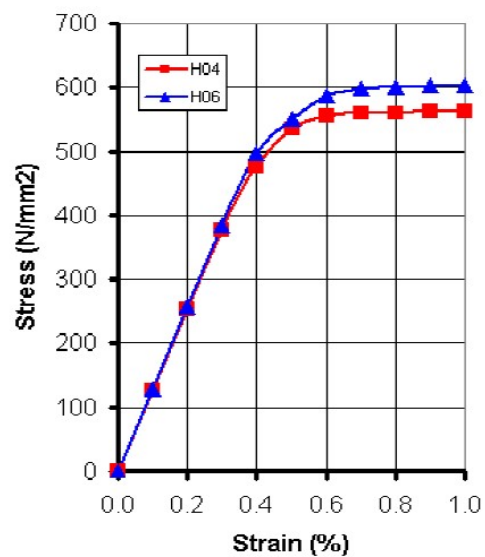


Typical properties for material at 0.010" (0.25 mm)

Parallel



Transverse



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