

C21000 (CuZn5) 18 08 US

Comparable standards: UNS C21000 • EN CW500L • JIS C2100
 Aurubis designations: C210 • PNA221

Description CuZn5 has a nominal composition of 95 % copper and 5 % zinc with a color almost identical to copper and similar corrosion resistance but with a slightly greater strength and better ductility than copper or Cu-ETP. This alloy has the optimum bend or formability characteristic of all the copper alloys and is rated 100. It is the most malleable of the copper alloys and can be coined into plaques, medallions, buckles with extremely sharp impressions. CuZn5 is the optimum material for vitreous enameling and gold plating. The high resistance to stress-corrosion cracking and its durability make it ideal for engineering applications, which must withstand the rigors of outdoor and industrial service.

Composition

Cu*	Fe	Pb	Zn
[%]	[%]	[%]	[%]
94.0-96.0	0.05 max	0.05 max	rem.

*) Cu + sum of named elements min 99.8 %

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]
1950 1066	0.32 8.86	0.09 0.38	56 33	135 234	17 117	10 18

The specified conductivity applies to the soft condition only

Mechanical properties

Temper	Tensile strength Rm [ksi] [MPa]	Yield strength Rp0.2 nominal [ksi] [MPa]	Elongation 2'' nominal [%]	Hard-ness nominal HR30T HV	min bend ratio 90°		min. bend ratio 180°	
					GW	BW	GW	BW
Soft	34-40 235-276	10 69	45		0.0	0.0	0.0	0.0
H02 (1/2H)	42-52 290-359	44 304	17	54	0.0	0.0	0.0	1.0
H04 (H)	50-59 345-407	53 366	5	62	0.0	0.0	1.0	1.5
H06 (EH)	56-64 386-441	59 407	2	65	0.5	1.0	1.0	1.5
H08 (SH)	60-68 414-469	63 435	2	67	1.0	2.0	1.0	3.0
H10 (ES)	61-69 421-476	64 441	1	68	1.5	3.0	1.5	

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

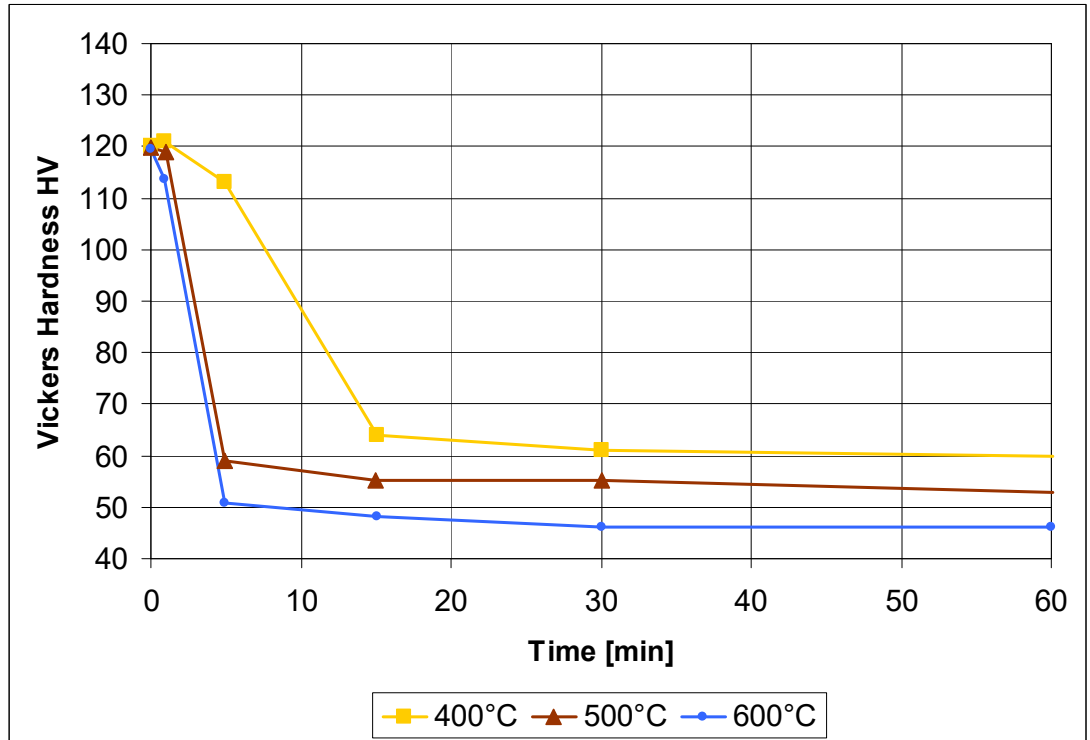
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Fabrication properties

Electrical and thermal conductivity	excellent
Formability	excellent
Weldability	good

Softening resistance

Vickers hardness after heat treatment



Typical uses

Coins, medals, tokens, emblems, buckles, jewelry, plaques, medallions, base for gold plate and vitreous enameling, fuse caps and primers, bullet jackets.

Applicable specifications

ASTM B36

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