

C19210 (CuFe0.1P)

18 08 US

Comparable standards: UNS C19210 • EN - • JIS C1921
 Aurubis designations: C1921 • KFC • PNA214

Description A copper alloy for electrical and heat transfer applications features a singular combination of properties to ensure reliable performance. Electrical conductivity is typically around 92 % IACS with corresponding high thermal conductivity. Excellent stress relaxation performance and high softening temperature make this alloy well suited for demanding connector applications. Good formability also at higher strength levels contributes to the use of KFC for terminals with demanding shapes. Other KFC characteristics contribute to its utility value: corrosion resistance, ease of tinning and relatively high modulus of elasticity.

Composition

Cu*	Fe	P
[%]	[%]	[%]
rem.	0.015 – 0.15	0.025 – 0.04

*) Cu+Fe+P 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]
1980 1082	0.323 8.94	0.092 0.385	85 50	192 332	18 124	9.7 17.5

The specified conductivity applies to the soft condition only

Mechanical properties

Tempers	Tensile strength Rm [ksi] [MPa]	Yield strength Rp0.2 nominal [ksi] [MPa]	Elongation 2'' nominal [%]	Hard-ness HV nominal [-]	min bend ratio 90°		min. bend ratio 180°	
					GW	BW	GW	BW
Soft								
H02	43-53 297-366	43 297	18	105	0	0	0	0
H04	51-61 352-421	55 379	9	120	0	0	0	0
H06	55-65 379-448	58 400	4	133	0.5	0.5	0.5	1.0
H08	65-75 448-517	68 469	3	150	2.0	2.5	2.5	3.0

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

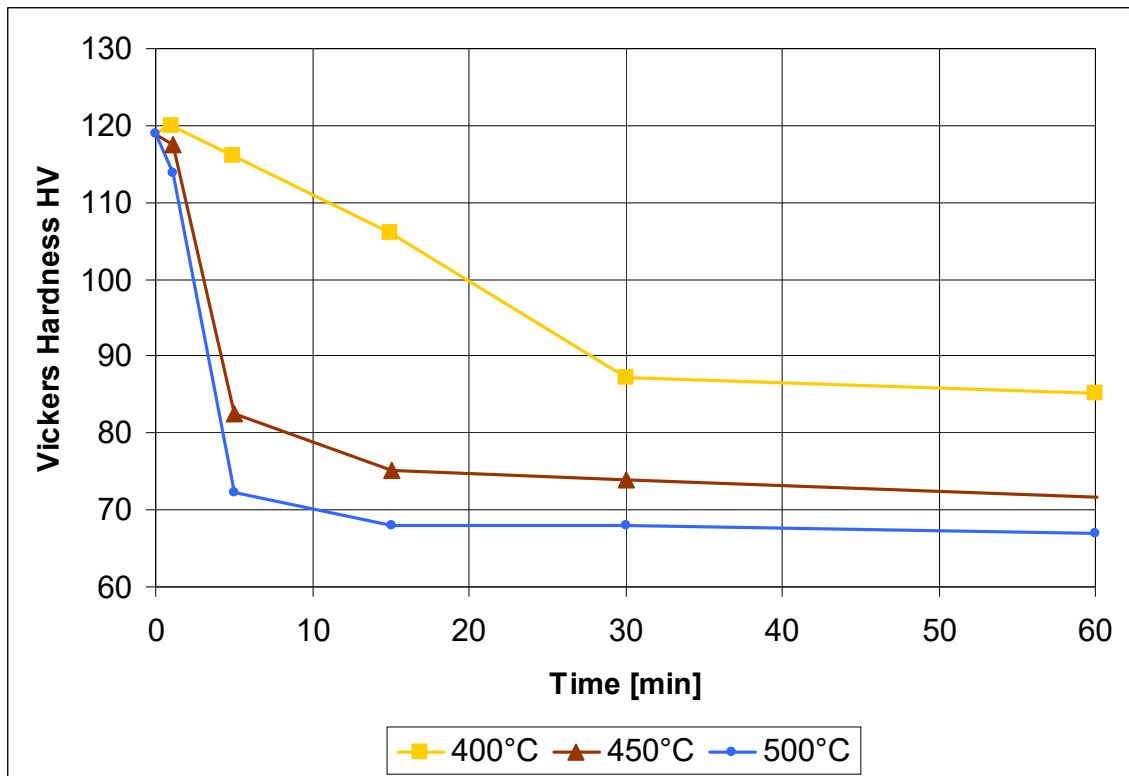
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Fabrication properties

Cold formability	excellent
Hot formability	excellent
Soldering	excellent
Brazing	excellent
Oxyacetylene welding	good
Gas shielded arc welding	excellent
Resistance welding	fair

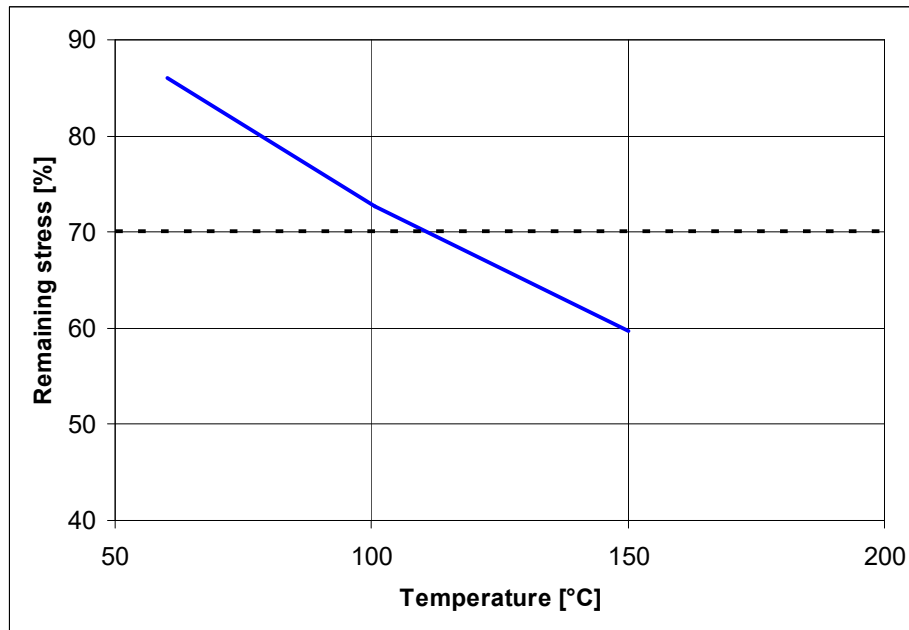
Softening stability

Vickers hardness after heat treatment.
(Temper H04, typical values)



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Stress relaxation resistance



Typical temperature for min 70 % remaining stress after 3000 h: 120 °C

Typical uses Connectors and terminals for electrical and electronic applications, bus bars for junction boxes, lead frames and electrical contacts.

Applicable specifications ASTM B465, B888

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