

PNA 214

CuFeo.1P / C19210

Release 03_2009_E



PNA 214 is a low alloyed, precipitation-stabilised copper alloy. The main application is in the production of lead-frames.

It combines the very high electrical and thermal conductivity with relatively high strength. Alloy PNA 214 is excellent for welding and soldering.

Chemical Composition (wt. %)

Cu	Remainder
Fe	0.050 – 0.150
P	0.025 – 0.040

Physical Properties

Density	g/cm ³	8.89
Coefficient of Thermal Expansion	10 ⁻⁶ /K	17
Electrical Conductivity	MS/m	> 49
	%IACS	> 85
Thermal Conductivity	W/(mK)	350
Modulus of Elasticity	kN/mm ²	130

Material Designation

Aurubis	PNA 214
EN	Not Standardized
UNS*	C19210
ISO	CuFeo.1P
BS	N/a

* Unified Numbering System

Mechanical Properties

		R 300	R 360	R 420
		H 080	H 110	H 120
Tensile Strength <i>R_m</i>	N/mm ²	300 - 380	360 - 440	420 - 500
Yield Strength <i>R_{p0.2}</i>	N/mm ²	< 300	> 260	> 350
Elongation <i>A₅₀</i>	%	> 10	> 3	> 2
Hardness <i>H_v</i>	-	80 - 110	110 - 130	120 - 150

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Bendability

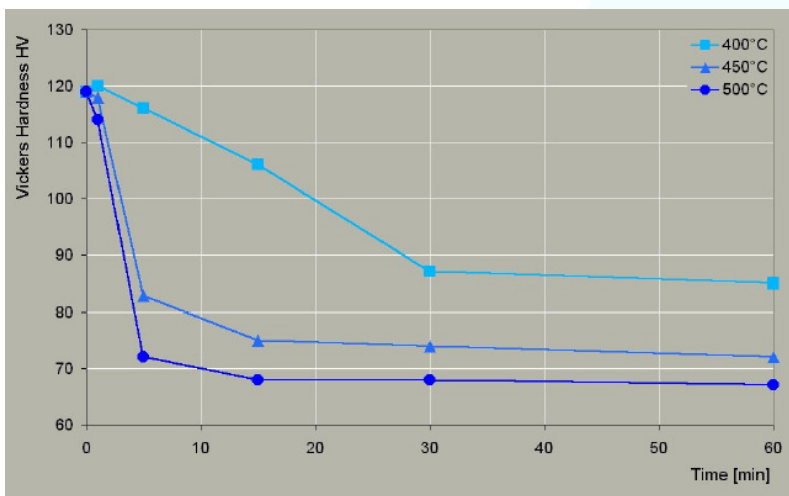
	R 300	R 360	R 420	
r = x·t (t ≤ 0.5mm)	90° GW**	0	0.5	1.5
	90° BW	0	0.5	1.5
	180° GW	0	0.5	1.5
	180° BW	0	0.5	1.5

** GW: bending edge ⊥ rolling direction, BW: bending edge || rolling direction.

Softening Stability

Vickers hardness after heat treatment (typical values)

(Temper R 420)



Fabrication Properties

Cold Formability	Excellent
Hot Formability	Excellent
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shield Arc Welding	Excellent
Resistance Welding	Fair

Typical Applications

Automotive, Components of electrical Engineering, Terminals, Leadframes, Contacts, Connectors, Relays, Springs, Cooling fins, Heat Exchangers

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