

PNA 227

CuZn33 / C26800

Release 03_2009_E



PNA 227 is solid solution strengthened copper alloy (brass) with 33% zinc. As the zinc content increases in the alloy, the strength improves, but is accompanied by losses in conductivity and ductility.

Moreover, it should be noted that as the zinc content rises, the inclination to stress corrosion cracking increases in the event of exposure to an ammoniacal atmosphere. This type of corrosion can, however, be combated in many cases by the removal of thermal stress.

As the zinc content rises, the user may under certain circumstances have an economic advantage due to the different metal values.

Chemical Composition (wt. %)

Cu	67 – 67.5
Fe	Maximum 0.03
Pb	Maximum 0.05
Zn	Remainder

Physical Properties

Density	g/cm ³	8.47
Coefficient of Thermal Expansion	10 ⁻⁶ /K	20.3
Electrical Conductivity	MS/m	15.8
	%IACS	27
Thermal Conductivity	W/(mK)	116
Modulus of Elasticity	kN/mm ²	112

Material Designation

Aurubis	PNA 227
EN	CW506L
UNS*	C26800
ISO	CuZn33
BS	CZ107

* Unified Numbering System

Mechanical Properties

		R 280	R 350	R 420	R 500	G010	G 020	G 030	G 050
		H 055	H 095	H 125	H 155				
Tensile Strength <i>Rm</i>	N/mm ²	280 – 380	350 – 430	420 – 500	> 500	410	360	340	330
Yield Strength <i>Rp0.2</i>	N/mm ²	< 170	> 170	> 300	> 450	210	150	130	110
Elongation <i>A50</i>	%	> 40	>23	> 6	-	> 40	> 40	> 40	> 40
Hardness <i>Hv</i>	-	55 – 90	90 – 125	125 - 155	> 155	< 120	< 95	< 90	< 80
Grain size <i>DK</i>	µm	-	-	-	-	< 15	15-30	20-40	35-70

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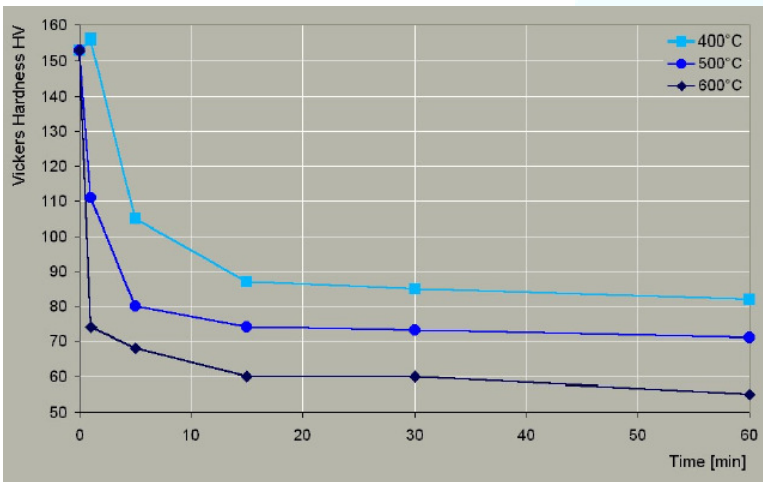
Bendability

	R 280	R 350	R 420	R 500
90° GW**	0	0	0	0.5
90° BW	0	0	0	0.5
180° GW	0	0	0	1
180° BW	0	0	0	1

** GW: bending edge \perp rolling direction, BW: bending edge \parallel rolling direction.

Softening Stability

Vickers hardness after heat treatment (typical values)
(Temper R 500)



Fabrication Properties

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

Typical Applications

Components for Electrical Engineering
Automotive, Connectors
Wires, Clips
Cases, Coolers
Springs, Chains

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