

# PNA 283

CuSn8 / C52100

Release 03\_2009\_E



PNA 283 is a solid solution strengthened copper alloy with 8% tin (bronze). It is therefore the highest alloyed phosphor bronze. This is apparent in the high strength combined with still adequate conductivity.

In addition, it had better corrosion resistance and good sliding properties. PNA 283 is used for springy components and sliding elements when increased strength and wear resistance are required.

## Chemical Composition (wt. %)

Cu	Remainder
Sn	7.5 – 8.5
P	0.01 – 0.4
Zn	Maximum 0.2

## Physical Properties

Density	g/cm <sup>3</sup>	8.8
Coefficient of Thermal Expansion	10 <sup>-6</sup> /K	18.5
Electrical Conductivity	MS/m	7.5
	%IACS	12.9
Thermal Conductivity	W/(mK)	67
Modulus of Elasticity	kN/mm <sup>2</sup>	115

## Material Designation

Aurubis	PNA 283
EN	CW453K
UNS*	C52100
ISO	CuSn8
BS	PB104

\* Unified Numbering System

## Mechanical Properties

		R 370	R 450	R 540	R 600	R 660	R 740
		H 090	H 135	H 170	H 190	H 210	H 230
Tensile Strength <i>R<sub>m</sub></i>	N/mm <sup>2</sup>	370 – 450	450 – 550	540 – 630	600 – 690	660 – 750	> 740
Yield Strength <i>R<sub>p0.2</sub></i>	N/mm <sup>2</sup>	< 300	> 280	> 460	> 530	> 620	> 700
Elongation <i>A<sub>50</sub></i>	%	50	20	13	5	3	2
Hardness <i>H<sub>v</sub></i>	-	90 – 120	135 – 175	170 – 200	190 – 220	210 – 240	> 230

The above mentioned data is general technical product information only and is not a legal warranty. Binding specifications are subject to a later conclusion of contract. This document is not subject to revision. Aurubis UK believes the information contained herein to be reliable. However, technical information is given by Aurubis UK without charge, and the user should employ such information at their own discretion and risk; Aurubis UK assumes no responsibility for results obtained or damages incurred from the use of such information in whole or in part.

Aurubis UK Ltd • Rabone Park • Rabone Lane • Smethwick • West Midlands • B66 2NN • United Kingdom

Tel. +44 (0)121 555 1199 • Fax. +44 (0)121 555 1188 • info-uk@aurubis.com • www.aurubis.co.uk

## Bendability

	R 370	R 450	R 540	R 600	R 660	R 740	
r = x·t (t ≤ 0.5mm)	90° GW**	0	0	0	0.5	1	-
	90° BW	0	0	0.5	1.5	2.5	-
	180° GW	0	0	1	2	3	-
	180° BW	0	0	2	3	4	-

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

## Fabrication Properties

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

## Typical Applications

Automotive, Components of electrical Engineering, Connectors, Frame Connectors, Relays and Conductor Springs, Retaining Clamps, Spring rings, Slide bearings, Bushings

The above mentioned data is general technical product information only and is not a legal warranty. Binding specifications are subject to a later conclusion of contract. This document is not subject to revision. Aurubis UK believes the information contained herein to be reliable. However, technical information is given by Aurubis UK without charge, and the user should employ such information at their own discretion and risk; Aurubis UK assumes no responsibility for results obtained or damages incurred from the use of such information in whole or in part.

Aurubis UK Ltd • Rabone Park • Rabone Lane • Smethwick • West Midlands • B66 2NN • United Kingdom

Tel. +44 (0)121 555 1199 • Fax. +44 (0)121 555 1188 • info-uk@aurubis.com • www.aurubis.co.uk