# PNA 226

**CuZn30 / C26000**

Release 03_2009_E

PNA 226 is solid solution strengthened copper alloy (brass) with 30% 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 | 69.2 – 70 |
| Fe | Maximum 0.015 |
| Pb | Maximum 0.030 |
| Zn | Remainder |

| Physical Properties | | |
|---|---|---|
| Density | g/cm³ | 8.53 |
| Coefficient of Thermal Expansion | $10^{-6}$/K | 20 |
| Electrical Conductivity | MS/m | 16.4 |
| | %IACS | 28 |
| Thermal Conductivity | W/(mK) | 121.2 |
| Modulus of Elasticity | kN/mm² | 114 |

| Material Designation | |
|---|---|
| Aurubis | PNA 226 |
| EN | CW505L |
| UNS* | C26000 |
| ISO | CuZn30 |
| BS | CZ106 |

* Unified Numbering System

## Mechanical Properties

| | | R 270<br>H 055 | R 350<br>H 095 | R 410<br>H 120 | R 480<br>H 150 | G 010 | G 020 | G 030 | G 050 | G 075 |
|---|---|---|---|---|---|---|---|---|---|---|
| Tensile Strength *Rm* | N/mm² | 270 – 320 | 350 – 430 | 410 – 490 | > 480 | 410 | 360 | 340 | 330 | 310 |
| Yield Strength *Rp0.2* | N/mm² | < 160 | > 170 | > 260 | > 430 | 210 | 150 | 130 | 110 | 90 |
| Elongation *A50* | % | > 40 | > 21 | > 9 | - | > 40 | > 40 | > 40 | > 40 | > 50 |
| Hardness *Hv* | - | 55 – 90 | 95 – 125 | 120 - 155 | > 150 | < 120 | < 95 | < 90 | < 80 | < 70 |
| Grain size *DK* | µm | - | - | - | - | <15 | 15-30 | 20-40 | 35-70 | 50-100 |



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

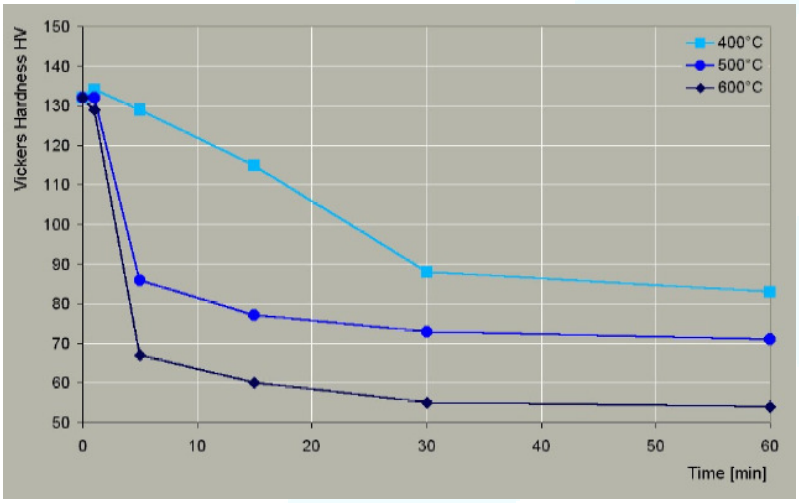
## Bendability

| | | R 270 | R 350 | R 410 | R 480 |
|---|---|---|---|---|---|
| r = x·t (t ≤ 0.5mm) | 90° GW** | 0 | 0 | 0 | 0.5 |
| | 90° BW | 0 | 0 | 0 | 1 |
| | 180° GW | 0 | 0 | 0 | 1 |
| | 180° BW | 0 | 0 | 0 | 1.5 |

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

## Softening Stability

Vickers hardness after heat treatment (typical values)
(Temper R 410) (Temper R 480)




| Fabrication Properties | |
|---|---|
| Cold Formability | Excellent |
| Hot Formability | Fair |
| Soldering | Excellent |
| Brazing | Excellent |
| Oxyacetylene Welding | Good |
| Gas Shield Arc Welding | Fair |
| Resistance Welding | Good |

## Typical Applications

Automotive
Components of electrical engineering
Ordnance, Connectors
Cases, Chains
Heat Exchangers, Coolers
Springs, Mechanical Housings for Ammunition and Shells



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