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# TECHNICAL DATA SHEET

## CW625N - CuZn35Pb1,5AlAs

S625

RODS / HOLLOW RODS

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**CW625N - CuZn35Pb1,5AlAs**

| Product Code | EN Symbol | EN No | ASTM | | Cu | Zn | Pb | Sn | Fe | As | Ni | Al | Mn | Others Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S625 | CuZn35Pb1,5AlAs | CW625N | - | Min (%) | 62,0 | Rest | 1,2 | - | - | 0,02 | - | 0,5 | - | - |
| | | | | Max (%) | 64,0 | Rest | 1,6 | 0,3 | 0,1 | 0,15 | 0,2 | 0,7 | 0,1 | 0,2 |

(*)Each of the other elements< 0,02 %

## Features And Applications

CW625N is an alloy as a substitute for the alloy CW602N. CW625N meets ISO 6509 requirements regarding the dezincification resistance. Approximately 2 hours annealing at around 500 °C is recommended for EN ISO 6509 standard compliance after hot forging process. Depending on the process conditions, temperature and time can also change. Also this alloy compliance with UBA Hygienic list, 4MS, RoHS II and REACH directives.

4MS and UBA Hygienic list group for CW625N alloy: B, C, D

## Area of Usage

Fitting parts used in aggressive (corrosive) water.

## Range of Products

S625 alloy can be produced in our extrusion and cold drawing unit as rods, hollows and profiles suitable for both forging and machining. Please contact us for other technical informations.

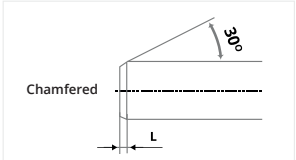
## TECHNICAL SPECIFICATIONS

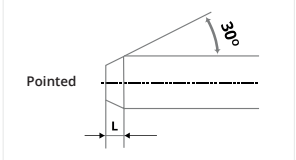
| | | | |
|---|---|---|---|
| **Structure** | α | **Melting Point** | 875-900 °C |
| **Machinability** | % 80 | **Hot Forming** | 700-800 °C |
| **Density** | 8,4 g/cm³ | **Soft Annealing** | 500-550 °C |
| **Electrical Conductivity** | 19 %IACS | **Soft Annealing Time** | 2 Hours |
| **Thermal Conductivity** | 93 W/(m·K) | **Stress Relieving** | 200-250 °C |
| **Elasticity Module** | 100 Gpa | **Stress Relieving Time** | 2 Hours |
| **Coeff. of Thermal Expansion** | 21,3 10-6/K | **Max. Depth of Dezincification** | <200 µm |

## INDICATIVE SHAPED ENDS DIMENSIONS

| Nominal Diameter or Width | | Type A – Chamfer Lenght (L) | | Type B – Point Lenght (L) | |
|---|---|---|---|---|---|
| Across-Flats (mm) | | **Min** (mm) | **Max** (mm) | **Min** (mm) | **Max** (mm) |
| Over | Up to and including | | | | |
| - | 10 | 0,2 | 1,5 | 2 | 7 |
| 10 | 20 | 0,2 | 2 | 3 | 10 |
| 20 | 30 | 0,2 | 3 | 4 | 12 |

Unless otherwise specifed by the buyer, the shape of the ends of products larger than 30 mm is up to the supplier.



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| Nominal Diameter or Width Across-flats (mm) | | Preferred (available) Lengths (mm) | Tolerance on Length (mm) |
|---|---|---|---|
| Over | Up to and including | | |
| 10 inc. | 30 | 3.000-4.000 | ±50 |
| 30 | 65 | 3.000-4.000 | ±100 |

**Stress Relieving** The polygonal rods and hollow rods are subjected to stress relieving treatment

**Packaging** 500 or 1000 kg bundle – 3/5 metal straps different bundle packagings, up to 10 mm dimension products are packed with wooden case

## EN 12164 - Rods for Free Machining

| Material Condition | Nominal Diameter (mm) | | Width Across-Flats (mm) | | Tensile Strength Rm N/mm² (MPa) | 0,2 % Proof Strength N/mm² (MPa) | | Elongation | | | Hardness (HBW) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Over | Up to and inc | Over | Up to and inc | Min | Min | Max | A100mm (%) Min | A11,3 (%) Min | A (%) Min | Max | Max |
| M | All | | All | | As manufactured | | | | | | | |
| R280 | 10 | 65 | 10 | 55 | 280 | - | 200 | - | 25 | 30 | - | - |
| H070 | 10 | 65 | 10 | 55 | - | - | - | - | - | - | 70 | 110 |
| R320 | 10 | 60 | 10 | 50 | 320 | 200 | - | - | 15 | 20 | - | - |
| H090 | 10 | 60 | 10 | 50 | - | - | - | - | - | - | 90 | 135 |
| R400 | 10 | 15 | 10 | 13 | 400 | 250 | - | - | 5 | 8 | - | - |
| H105 | 10 | 15 | 10 | 13 | - | - | - | - | - | - | 105 | - |

## EN 12168 - Hollow Rods for Free Machining

| Material Condition | Wall Thickness (mm) | | Tensile Strength Rm N/mm² (MPa) | 0,2 % Proof Strength N/mm² (MPa) | | Elongation A (%) | Hardness (HBW) | | Hardness (HV) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Over | Up to and inc | Min | Min | Max | Min | Min | Max | Min | Max |
| M | All | | As manufactured | | | | | | | |
| R280 | 4 | All | 280 | - | 200 | 30 | - | - | - | - |
| H070 | 4 | All | - | - | - | - | 70 | 110 | 80 | 120 |
| R320 | 4 | 20 | 320 | 200 | - | 20 | - | - | - | - |
| H090 | 4 | 20 | - | - | - | - | 90 | 135 | 100 | 145 |
| R400 | 4 | 8 | 400 | 250 | - | 8 | - | - | - | - |
| H105 | 4 | 8 | - | - | - | - | 105 | - | 115 | - |

## EN 12165 - Wrought and Unwrought Forging Stocks

| Material Condition | Nominal Diameter (mm) | | Hardness (HBW) | |
|---|---|---|---|---|
| | Over | Up to and inc | Min | Max |
| M | All | | As manufactured | |

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**CW625N - CuZn35Pb1,5AlAs**

| STANDARD | | EN 12164 | | | EN 12165 | | EN 12168 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dimension Range | | Round Rod | | Hexagonal, Square | Round Rod | | Round and Hexagonal Hollow Rod, Outer Dim. Tol. | | | Hole Tolerance Round | | Hole Tol. Hexagonal |
| Over | Up to & inc. | Class A | Class B | Rod | Class A | Class B | Class A | Class B | Class C | Class A | Class B | - |
| - | 10 | 0<br>-0,06 | 0<br>-0,036 | 0<br>-0,09 | ±0,25 | ±0,14 | - | - | - | - | - | - |
| 10 | 13 | 0<br>-0,07 | 0<br>-0,043 | 0<br>-0,11 | ±0,25 | ±0,14 | - | - | - | - | - | - |
| 13 | 18 | 0<br>-0,07 | 0<br>-0,043 | 0<br>-0,11 | ±0,25 | ±0,14 | - | - | - | ±0,35 | - | +0,70<br>-0 |
| 18 | 20 | 0<br>-0,08 | 0<br>-0,052 | 0<br>-0,13 | ±0,30 | ±0,17 | - | - | - | ±0,42 | - | +0,84<br>-0 |
| 20 | 23 | 0<br>-0,08 | 0<br>-0,052 | 0<br>-0,13 | ±0,30 | ±0,17 | - | - | - | ±0,42 | ±0,17 | +0,84<br>-0 |
| 23 | 26 | 0<br>-0,08 | 0<br>-0,052 | 0<br>-0,13 | ±0,30 | ±0,17 | - | 0<br>-0,21 | - | ±0,42 | ±0,17 | +0,84<br>-0 |
| 26 | 30 | 0<br>-0,08 | 0<br>-0,052 | 0<br>-0,13 | ±0,30 | ±0,17 | - | 0<br>-0,21 | 0<br>-0,13 | ±0,42 | ±0,17 | +0,84<br>-0 |
| 30 | 50 | 0<br>-0,16 | - | 0<br>-0,16 | ±0,60 | ±0,20 | - | 0<br>-0,25 | 0<br>-0,16 | ±0,80 | ±0,20 | +1,6<br>-0 |
| 50 | 55 | 0<br>-0,19 | - | 0<br>-0,19 | ±0,70 | ±0,37 | - | 0<br>-0,46 | 0<br>-0,30 | ±0,95 | ±0,37 | - |
| 55 | 65 | 0<br>-0,19 | - | - | ±0,70 | ±0,37 | ±0,60 | 0<br>-0,46 | 0<br>-0,30 | ±0,95 | - | - |
| 65 | 80 | 0<br>-0,19 | - | - | ±0,70 | ±0,37 | ±0,60 | 0<br>-0,46 | 0<br>-0,30 | - | - | - |
| 80 | 110 | - | - | - | ±2 | - | - | - | - | - | - | - |

**For Hollow Rods**

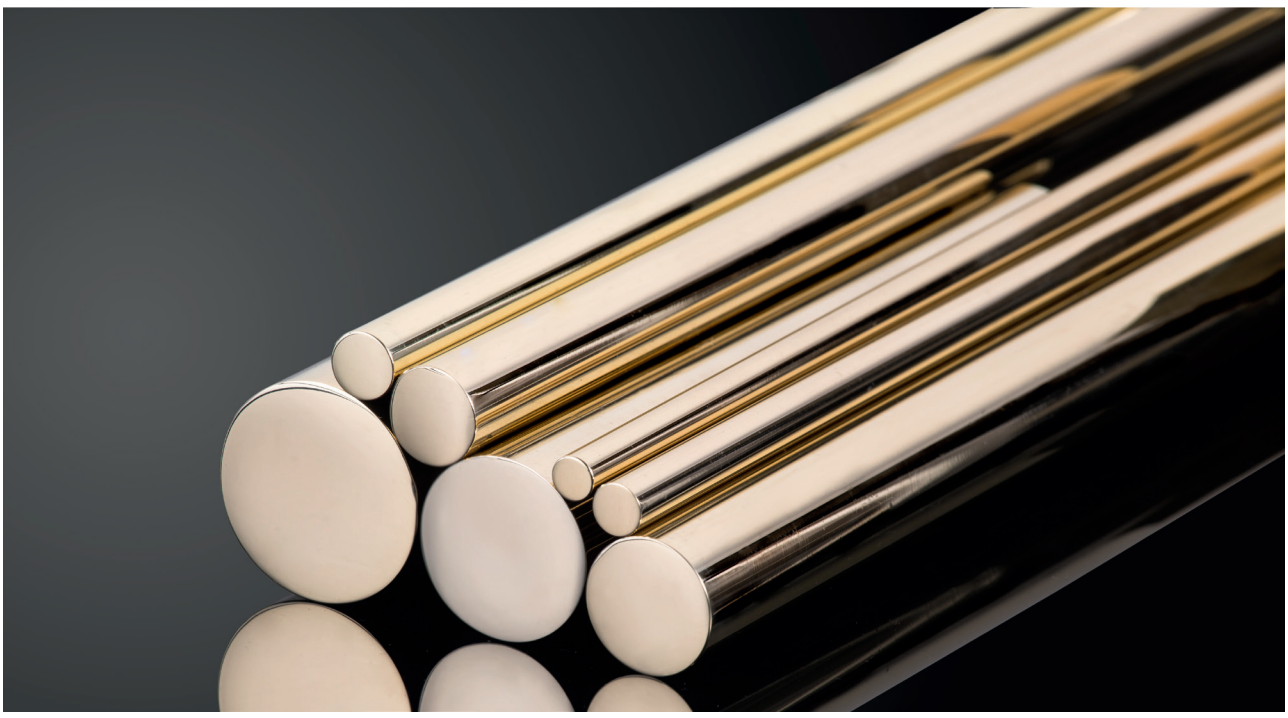
Minimum wall thickness is 4 mm. Eccentricity: %8 (max).
Minimum wall thickness is 5 mm over 65 mm.

**"For hollows, maximum outer diameter is Ø78 mm and maximum producible weight is 28 kg in 1 meter."**

**Outer Cold Drawn - Internal Extruded**
Outer Class B - Hole Class A tolerance

**Inner-Outer Cold Drawn**
Outer Class C - Hole Class B tolerance

**Inner-Outer Extruded**
Outer Class A - Hole Class A tolerance



Rev: 01.2025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