# CW727R - CuZn35Sn1P

The alloy shows after heat treatment a good resistance to dezincification, sufficient machinability, very good hot working properties

**All data are reference values and are not to be used as a basis for constructive stress calculation.**

## Designations

EN 12164* Bars

EN 12165* Forgings

EN 12167* Profiles and edged bars

EN 12168* Hollow bars

EN 12420* Forgings

* inclusion of this alloy in the standards has already been initiated

## Chemical composition

| Cu | 63.5-65.0 | Weight-% |
|----|-----------|----------|
| Pb | ≤ 0.1 | Weight-% |
| Sn | 0.5-1.0 | Weight-% |
| P | 0.05-0.15 | Weight-% |
| Zn | Rest | Weight-% |

## Workability

| Machinability | | | | | |
|---------------|--|--|--|--|--|
| Hot Forming | | | | | |
| Cold Forming | | | | | |
| Mechanical Polishing | | | | | |
| Soft Solderability | | | | | |
| Hard Solderability | | | | | |

## Physical properties

| Density (20°C) | 8.36 | g/cm³ |
|----------------|------|-------|
| Fusion temperature | 880-910 | °C |
| Thermal conductivity | 122 | W/mK |
| Thermal capacity | 380 | J/kgK |
| Electrical conductivity | 15.1 | MS/m |
|  | 26 | % IACS |
| Young's modulus (20°C, annealed) | 105 | GPa |
| Thermal expansion coefficient | 21.5 | $10^{-6}K^{-1}$ |

## Microstructure

Heterogeneous structure of $\alpha$- and $\beta'$-mixed crystals. Tin and Phosphorus increase the corrosion resistance of this alloy. Tin maintains its machinability.

## Corrosion resistance

Due to its Tin content the alloy CW727N shows generally a good corrosion resistance. Minor additions of Phosporus improves its resistance to dezincification.

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## Potential Applications

Fittings, sanitary industry*

Shaped turned parts

Forged parts

*(the alloy is currently in the process of being approved for drinking water applications.

## Mechanical properties at room temperature

Typical mechanical properties measured on a DZR annealed rod

| $R_m$ (MPa) | $R_{p0.2}$ (MPa) | A% | HB |
|---|---|---|---|
| 380 | 270 | 28.3 | 121 |

The max. dezincification depth measured acc. to DIN EN 6509-1 was below 100µm.

*This data sheet is for general information only and is not subject to revision.*