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CuZn39Pb2  
C37700

## Brass Technical Data Sheet

### Material Designation

EN CW612N

UNS\* C37700

\* Unified Numbering System (USA)

### Chemical Composition (Reference)

Cu 59 %

Pb 1.8 %

Zn balance

### Typical Applications

- Precision mechanical components
- Watch and clock parts
- Milled parts

### Physical Properties\*

Electrical Conductivity	MS/m	14
	%IACS	24
Thermal Conductivity	W/(m·K)	109
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /K	1.6
Coefficient of Thermal Expansion**	10 <sup>-5</sup> /K	21.1
Density	g/cm <sup>3</sup>	8.43
Modulus of Elasticity	GPa	102
Specific Heat	J/(g·K)	0.377
Poisson's Ratio		0.34

\* Reference values at room temperature

\*\* Between 0 and 300 °C

### Fabrication Properties

Capacity for Being Hot Worked	excellent
Machinability	excellent
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	excellent
Soft Soldering	excellent
Resistance Welding	fair
Gas Shielded Arc Welding	less suitable
Laser Welding	less suitable

### Corrosion Resistance

Good resistance to: fresh water, neutral or alkaline saline solutions, organic compounds as well as land, sea, and industrial atmosphere.

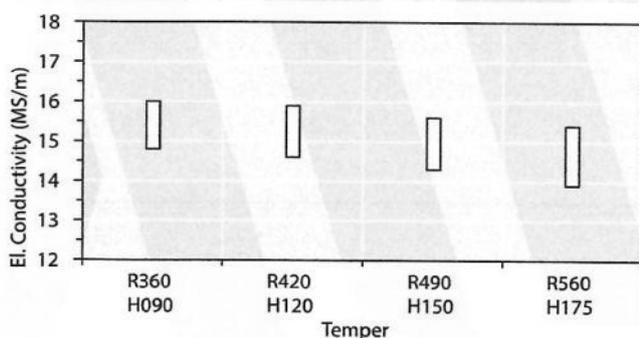
Not resistant to: acids, hydrous sulphur compounds, hydrous ammonia (stress corrosion cracking) in the non-stress-relieved condition. It is, however, susceptible to dezincification due to the two-phase  $\alpha/\beta$ -structure.

### Mechanical Properties

Temper		R360	R420	R490	R560
Tensile Strength $R_m$	MPa	360–440	420–500	490–570	≥ 560
Yield Strength $R_{p0.2}$	MPa	≤ 270	≥ 270	≥ 420	≥ 510
Elongation $A_{50mm}$	%	≥ 30	≥ 12	–	–

Temper		H090	H120	H150	H175
Hardness HV		90–120	120–150	150–180	≥ 175

### Electrical Conductivity





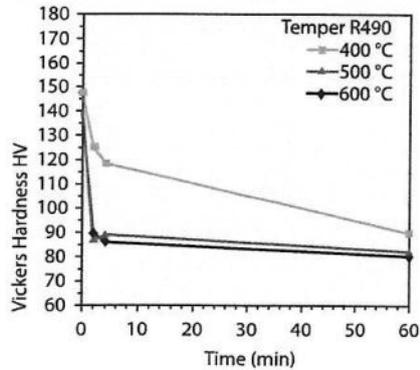
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### Resistance to Softening



Vickers hardness  
after heat treatment  
(typical values)

### Fatigue Strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for  $10^7$  load cycles under symmetrical alternate load without breaking. It is dependent on the temper tested and is about  $\frac{1}{3}$  of the tensile strength  $R_m$ .

### Types and Formats Available

- Standard coils with outside diameters up to 1400 mm
- Contour-milled strip
- Sheet
- Strip and sheet with protective coating

### Dimensions Available

- Strip thickness from 0.20 mm
- Strip width from 3 mm, however min. 10 x strip thickness