

Alloy Designation

EN	CuZn5 (2.0220)
DIN CEN/TS 13388	CW500L
JIS	C 2100
BS	CZ 125
UNS	C21000

Characteristics

CuZn5 has very good cold forming properties and is well suited for e.g. coinage, beating, embossing. This alloy has a higher strength as pure copper.

CuZn5 has good welding and brazing properties as well as a good corrosion resistant and is not fragile to stress corrosion and dezincification. It is principally used in jewellery, metal goods, watch industry and in electronic industry for installation parts.

We produce qualities with grain sizes below 5 µm if needed.

Main Applications

Architecture: Ornamental Trim.

Consumer: Jewelry, Emblems, Plaques, Medallions.

Electrical: Components for the Electrical Industry, Connectors, Rotor Bars, AC Motors.

Fasteners Industrial: Metal Goods, Base for Vitreous Enamel, Base for Gold Plate.

Ordnance: Primers, Small Arm Ammunition: Primer Caps, Bullet Jackets, Fuse Caps, Firing Pin Support Shells, Bullet.

Other: Coins, Tokens, Medals.

Chemical Composition (Balance)

Weight percentage

Cu	94 .. 96	%
Zn	Rest	%
Ni	≤ 0.3	%
Sn	≤ 0.1	%
Fe	≤ 0.05	%

Mechanical Properties (EN 1652)

Temper	Tensile Strength Rm MPa	Yield Strength Minimum Rp _{0.2} MPa	Elongation Minimum A _{50mm} %	Hardness HV *
R230	230 .. 280	≤ 130 *	36	45 .. 75
R270	270 .. 350	200 *	12	75 .. 110
R340	≥ 340	280 *	4	≥ 110

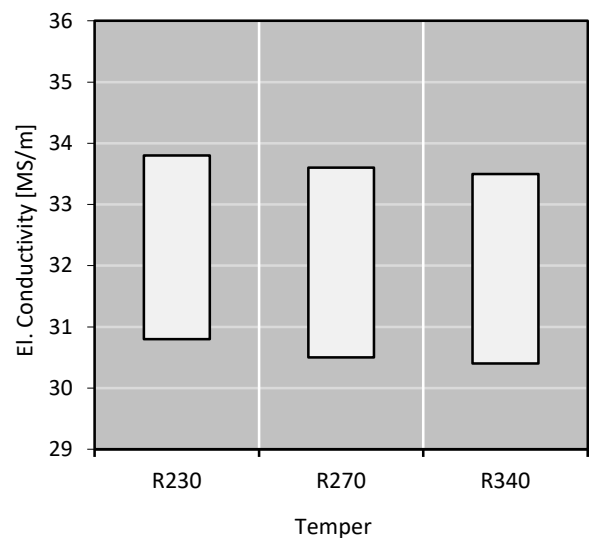
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Physical Properties

Typical values in annealed temper at 20 °C

Density		8.86	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	18	10 ⁻⁶ /K
Specific heat capacity		0.38	J/(g·K)
Thermal conductivity		234	W/(m·K)
Electrical conductivity	MS/m	33	MS/m
Electrical conductivity	IACS	56,9	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	2.3	10 ⁻³ /K
Modulus of elasticity	GPa	127	GPa

Electrical Conductivity



Fabrication Properties *

Cold Forming Properties	Excellent
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Good
Gas Shielded Arc Welding	Good
Laser Welding	Fair

* For more details call our technical service

Corrosion Resistance *

Resistant to:

CuZn5 has in general a good resistance to natural-, sea- and industrial atmosphere, water, water vapour, different saline solutions, many organic liquids, neutral- and alkaline bonds.

CuSn5 has a very low sensitivity stress corrosion cracking. To avoid stress corrosion as much as possible, the alloy should be used in a stress relieved temper.

CuSn5 is not sensitive to dezincification, that could occur in water with high chlorine content and low carbonate-hardness.

Not resistant to:

Oxidizing acids, hydrous Sulphur components



Bend Fatigue (at room temperature)

The fatigue strength gives an indication about the resistance to variations in applied tension. It is measured under symmetrical alternating load. The maximum bending load for 10^7 load cycles without crack is measured. Dependent on the temper class it is approximately 1/3 of the tensile strength R_m .

Available delivery forms *

Strips in coils

Traverse-wound coils with drum weights up to 1.5 t

TECSTRIP®_multicoil up to 2.5 t

Hot-Dip-Tinned strips in thickness range 0.10 up to 1.20 mm

* For more details call our sales service

Due to continued improvements within our production process, the details stated in our brochure can not be guaranteed. We reserve the right to update or amend our products, without prior notification. We suggest that you obtain confirmation of our product details / specifications prior to committing to specific alloys.