

Designation	CuZn5	DIN	EN Nr.	UNS (ASTM)	AISI	WCA
		-	CW500L	21000	-	710

Chemical composition

Zn	Cu	Al	Fe	Ni	Pb	Sn	Others
Balance	94.0 - 96.0	≤ 0.02	≤ 0.05	≤ 0.30	≤ 0.05	≤ 0.05	≤ 0.10

Values (Weight %). In order to achieve maximum homogeneity and consistent quality, the actual manufacturing tolerances are tighter and more precisely than the composition indicated.

Main technical properties and features

CuZn5 is a brass containing 95% of copper and 5% Zinc, commercially known as Gilding metal. Sometimes called Tombac, this alloy is very versatile, its low-cost price makes it an alternative for applications including deep drawn parts as bullet jackets and coined products.

Thanks to the combination of moderate conductivity and improved mechanical strength, CuZn5 is the material of choice for electrical applications in which performance requirements are impossible to achieve with standard copper.

CuZn5 brass presents good resistance to corrosion, seasonal cracking and dezincification, as well as good welding and brazing properties.

Typical uses

Metal goods, jewellery, watchmaking, electrotechnics and electrical industry.

Typical manufacturing range

	Thickness (mm)	Width (mm)	Length (mm)
Rolled products Strip in coils ^[1]	0.10 - 1.50	3 - 140	-
Strip as sheets ^[1]	0.10 - 1.50	10 - 120	500 - 3000

^[1] Not all our production possibilities are presented here. Other dimensions or product forms available upon request. Some combinations of thicknesses and widths are not possible.

Mechanical properties of strips

Temper	R _{p0.2} (N/mm ²)	R _m (N/mm ²)	A _{50mm} (%)	Hardness HV
H045 soft	130 max.	230 - 280	36 min.	45 - 75
H075 ½ hard	200 min.	270 - 350	12 min.	75 - 110
H110 hard	280 min.	340 min.	4 min.	105 min.

Physical properties

Modulus of elasticity	kN/mm ²	117
Density	g/cm ³	8.86
Melting point	°C	1050 - 1065
Linear dilatation coefficient	10 ⁻⁶ / °C	17.0
Thermal conductivity at 20°C	W/m °K	234
Thermal capacity at 20°C	J/kg K	380
Electrical resistivity	μΩcm	3
Electrical conductivity at 20°C	MS/m	33 ^[1]
Electrical conductivity at 20°C	% IACS	56 ^[1]
Magnetic properties		Non magnetic

[1] Values for soft temper. The electrical conductivity decrease slightly for higher strain hardening.

Tolerances (strip and foil)

Thickness	Thickness (mm)		EN Standard		WEBER + CALIBRA		
	≥	<	10140 Precision	10258 Precision	WCA Standard	WCA Precision	WCA Extreme
<p>The table shown is an outline of our typical thickness tolerances available. They are tighter than industry standards.</p> <p>Our "WCA Precision" and "WCA Extreme" tolerances are available upon request.</p>	-	0.025	-	-	-	-	± 0.001
	0.025	0.050	-	-	± 0.003	± 0.002	± 0.0015
	0.050	0.065	-	± 0.003	± 0.003	± 0.0025	± 0.002
	0.065	0.100	-	± 0.004	± 0.004	± 0.0035	± 0.003
	0.100	0.125	± 0.005	± 0.006	± 0.005	± 0.004	± 0.003
	0.125	0.150	± 0.005	± 0.006	± 0.005	± 0.005	± 0.004
	0.150	0.250	± 0.010	± 0.008	± 0.008	± 0.006	± 0.004
	0.250	0.300	± 0.010	± 0.009	± 0.009	± 0.007	± 0.005
	0.300	0.400	± 0.010	± 0.010	± 0.010	± 0.007	± 0.005
	0.400	0.500	± 0.015	± 0.012	± 0.012	± 0.008	± 0.006
	0.500	0.600	± 0.015	± 0.014	± 0.014	± 0.010	± 0.007
	0.600	0.800	± 0.015	± 0.015	± 0.015	± 0.010	± 0.007
	0.800	1.000	± 0.015	± 0.018	± 0.018	± 0.012	± 0.009
	1.000	1.200	± 0.020	± 0.020	± 0.020	± 0.015	± 0.012
	1.200	1.250	± 0.020	± 0.020	± 0.020	± 0.015	± 0.012
1.250	1.500	± 0.020	± 0.020	± 0.020	± 0.015	± 0.014	
Width	Our width tolerances "Standard" is +0.2, -0.0 (or ± 0.1 mm upon request). They are available for slit widths < 125 mm and thicknesses < 1.00 mm. Special tolerances upon request.						
Camber	Width (mm)		Camber max. (mm/m)				
<p>Our tolerance "WCA Standard" respects the EN Standard 1654 (Length of measurement 1000 mm). Other tolerances upon request.</p>	>	≤	WCA Standard		WCA Extreme		
			≤ 0.5 mm	> 0.5 mm	≤ 0.5 mm	> 0.5 mm	
	3	6	12	-	6	-	
	6	10	8	10	4	5	
	10	20	4	6	2	3	
20	250	2	3	1	1.5		
Surface	Special surface qualities upon request						
Flatness	Special requirement on the longitudinal or transversal flatness upon request						

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