CuZn10

CuZn10 | C22000

CuZn10 is a solid-solution strengthened copper alloy containing 10% zinc (brass). CuZn10 exhibits excellent cold formability and is suitable for bending, pressing, and other cold forming processes. The alloy can be soldered, brazed, and welded. CuZn10 offers good resistance to stress corrosion cracking.
Due to its elevated zinc content, the brass provides economic advantages.
Application areas include architecture, pressed and deep-drawn products, textiles, jewelry, cosmetic packaging, and mechanical and electrical engineering components.

Comparable Standarts

EN	JIS	UNS
CW501L	C2200	C22000

Chemical Composition %

Cu	Zn	Ni	Sn	Fe	Pb	Al
89-91	rem	0.3 max	0.1 max	0.05 max	0.05 max	0.02 max

Physical Properties

Melting Point	1043	[°C]
Density	8.8	(g/cm³)
Cp @ 20°C	0.38	[kJ/kgK]
Thermal Conductivity	189	(W/mK)
Electrical Conductivity	≥43	%IACS
Modules of Elasticity	117	[GPa]
α @ 20°C	18.4	[10-6/K]

Note: The specified conductivity applies to the soft condition only.

Cp specific heat

α thermal expansion coefficent

Fabrication Properties

Cold Formability	excellent
Hot Formability	good
Soldering ability	excellent
Oxyacetylene welding	good
Gas shield arc welding	good
Resistance welding	not recommended
Machining	not recommended
Brazing	excellent

Electrical Conductivity

Electrical conductivity depends on chemical composition, level of cold deformation, and grain size. High levels of deformation and small grain size reduce conductivity.

Typcial Uses

Architecture, stamped and deep-drawn products, jewelry, textiles, cosmetic packaging, electrical, mechanical, and construction components.

Corrosion Resistance

Brass is resistant to natural, industrial, and salt-containing environments, potable water, and alkaline and neutral saline solutions. Brass has low corrosion resistance to acids, ammonia, halogens, cyanide, and hydrogen sulfide solutions and atmospheres, as well as seawater (especially at high flow rates).
Unlike brass alloys with higher zinc content, CuZn10 is not highly susceptible to stress corrosion cracking and is resistant to dezincification. However, if stress corrosion cracking might be an issue, the alloy should be stress-relieved.

Mechanical Properties

	Tensile Strength [MPa]	Yield Strength [MPa]	Elongation A50 [%]	Hardness HV [-]	Bend ratio 90° [r]		Bend ratio 180° [r]	
					GW	BW	GW	BW
R240	240-290	≤ 140	≥ 36	50-80	0	0	0	0
R280	280-360	≥ 200	≥ 13	80-110	0	0	0	0.5
R350	≥ 350	≥ 290	≥ 4	≥ 110	0	0.5	1	1.5

Other tempers are available upon request.

r = x * t (thickness t ≤ 0.5mm)

GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction.

Dimensional Specifications

Thickness (mm)	Width (mm)
0.04-0.20	10-380
0.21-1.00	5-380
1.01-4.00	15-400
4.01-8.00	25-400

Altek Döküm A.Ş. | Beylikdüzü OSB Mustafa Kurtoğlu Cad.No: 10/1 | Beylikdüzü - İstanbul | TÜRKİYE
satis@altekdokum.com | www.altekdokum.com

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