CuZn15

CuZn15 | C23000

CuZn15 is a solid-solution strengthened copper alloy containing 15% zinc (brass). CuZn15 exhibits excellent cold formability and is suitable for bending, pressing, and other cold forming processes. The alloy can be soldered, brazed, and welded.
Due to its elevated zinc content, the brass offers economic advantages.
CuZn15 is a widely used alloy with an excellent combination of strength, ductility, and corrosion resistance.
Application areas include stamped and deep-drawn products, textiles, jewelry, cosmetic packaging, and mechanical, construction, and electrical components.

Comparable Standarts

EN	JIS	UNS
CW502L	C2300	C23000

Chemical Composition %

Cu	Zn	Ni	Sn	Fe	Pb	Al
84-86	rem	0.3 max	0.1 max	0.05 max	0.05 max	0.02 max

Physical Properties

Melting Point	1027	[°C]
Density	8.75	(g/cm³)
Cp @ 20°C	0.38	[kJ/kgK]
Thermal Conductivity	159	(W/mK)
Electrical Conductivity	≥36	%IACS
Modules of Elasticity	122	[GPa]
α @ 20°C	18.7	[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	fair
Machining	fair
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, CuZn15 has low susceptibility 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 Strangth [MPa]	Elongation A50 [%]	Hardness HV [-]	Bend ratio 90° [r]		Bend ratio 180° [r]	
					GW	BW	GW	BW
R260	260-310	≤ 170	≥ 36	55-85	0	0	0	0
R300	300-370	≥ 150	≥ 16	85-115	0	0	0	0
R350	350-420	≥ 250	≥ 4	105-135	0	0	0	0
R410	410-490	≥ 360	≥ 2	125-155	0	1	0.5	1
R480	≥ 480	≥ 430	≥ 1	≥ 150	0.5	3	1	3.5

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

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