LAMINERIES MATTHEY
NOTZ group advanced metal solutions

Alloy CuZn23Al3Co

		DIN EN	UNS (ASTM)	AISI	LMSA
Designation	**CuZn23Al3Co**	CW703R	C68800	-	**B230**

Chemical composition

Zn	Cu	Al	Co	Fe	Ni	Pb	Sn	Others
Balance	72.0 - 75.0	3.00 - 3.80	0.25 - 0.55	≤ 0.05	≤ 0.30	≤ 0.05	≤ 0.10	≤ 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

The CuZn23Al3Co is a special copper-zinc brass containing Al and Co as additional alloying elements. Additions of aluminum and trace of cobalt improve the tensile strength, the corrosion resistance (in sea water for example), fatigue strength and the thermal stress relaxation. The CuZn23Al3Co presents good strength, a non-directional formability and a bendability on the same level as the CuSn6. The alloy has an %IACS 3 to 4 % higher than the CuSn6 alloy, and is specially used for electrical interconnectors.

Typical uses

The CuZn23Al3Co brass is used in many different applications, carries, insulators, transistor, switches, stamped-bent parts, contact springs, electrical connectors, relays and many electronic applications.

Typical manufacturing range

		Thickness (mm)	Width (mm)	Length (mm)
Rolled products	Strip in coils [1]	0.010 - 2.000	1.5 - 200.0	-
	Strip as sheets [1]	0.010 - 1.500	10.0 - 200.0	100 - 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			$Rp_{0.2}$ (N/mm^2)	R_m (N/mm^2)	A_{50mm} (%)	Hardness HV
R540	H170	soft	430 max.	540 - 600	30 min.	170 - 220
R630	H195	hard	500 min.	630 - 800	7 min.	195 - 250
R800	H240	extra hard	750 min.	800 min.	-	240 min.

Physical properties

Modulus of elasticity	kN/mm^2	116
Poisson ratio		0.34
Density	g/cm^3	8.20
Melting point	°C	950
Linear dilatation coefficient (0 - 300ºC)	10^{-6}·/ ºC	18.2
Thermal capacity (C_p) at 20ºC	kJ/kg K	0.377
Thermal conductivity at 20°C	W/m °K	69
Electrical resistivity (0 - 300ºC)	µΩcm	9.6
Electrical conductivity	MS/m	10
Electrical conductivity	% IACS	17
Magnetic properties		Non magnetic

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Tolerances (strip and foil)

Thickness

The table shown is an outline of our typical thickness tolerances available. They are tighter than industry standards.

Our "LMSA Precision" and "LMSA Extreme" tolerances are available upon request.

Thickness (mm)		EN Standard		Lamineries MATTHEY		
≥	<	10140 Precision	10258 Precision	LMSA Standard	LMSA Precision	LMSA Extreme
-	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

Our tolerance "LMSA Standard" respects the EN Standard 1654 (Length of measurement 1000 mm).
Other tolerances upon request.

Width (mm)		Camber max. (mm/m)			
		LMSA Standard		LMSA 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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