



Pb < 80 ppm
0% Cadmium
RoHS & REACH ok

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Lead free brass

Z42

Material designation		Chemical composition*			
CuZn42		Elements	% mean	Impurities	% max.
		Cu	58	Pb	0.008
		Zn	Balance	Other	0.2
		* Reference values in % by weight			
EN12163	CW510L				
EN12164	CW510L				
EN12165	CW510L				
EN12167	CW510L				

Properties and typical applications
Z42 is a lead free brass with an excellent machinability due to its biphasic structure $\alpha+\beta$. Luxury goods, leather goods, accessories (buckles, chains, studs...), jewellery, decoration.

Physical properties at 20°C		Heat treatment	
Density (g/cm3)	8.37	Melting range (°C)	890-910
Young modulus (GPa)	105	Hot working (°C)	650-700
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	21.7	Annealing temperature (°C)*	450-600
Thermal conductivity (W/m.K)	139	Stress relieving treatment (°C)**	250-350
Thermal capacity (J/Kg.K)	375	* <i>Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i>	
Electrical conductivity (% I.A.C.S.)	31	** <i>Stress relieving treatment allows to eliminate the residual stresses present in the material in order to avoid the stress corrosion cracking.</i>	

Forming		Joining	
Hot forming	Very good	Soldering	
Cold forming	Fair	Soft	Very good
Machinability	95% (Réf : CuZn39Pb3 = 100%)	Hard	Very good
Corrosion resistance		Welding	
Lead-free brasses generally have good resistance to corrosion. However, they may present a problem of cracking corrosion in an aggressive environment in the presence of internal stresses, but also a risk of dezincification (if Zn > 15%) in the presence of hot and acidic water.		Gaz welding	Fair
		Inert gas shielded arc welding	Fair
		Resistance welding	Fair

Mechanical properties according to EN12164						
Condition of material	Diameter [mm]		Rp0,2 [Mpa] min. or max.	Rm [Mpa] min.	A(%) min.	Hardness HB
	from	to				
M	All		As extruded - without specific mechanical properties			
R360	6	80	< 320	360	20	-
H090			-	-	-	90-125
R430	6	40	> 220	430	10	-
H110			-	-	-	110-160
R500	6	14	> 350	500	5	-
H135			-	-	-	> 135

Fabrication range	
Available forms:	
Do not hesitate to contact us for further information regarding the dimensions, tolerances and metallurgical conditions. Our technical teams are by your side to help you succeed in your projects.	
info@m-lego.com	