

AMA

Material designation		Chemical composition*			
CuZn39Pb2		Elements	% mean	Impurities	% max.
		Cu	59.3	Fe	0.01
		Pb	2.05	Ni	0.01
				Si	0.015
				Al	0.01
EN 12164 / EN 12165 / EN 12167	CW612N	Zn	balance	Other	0.2
NF A 51-105	CuZn39Pb2				
BS 2872-2874	CZ128				
ASTM B124	C37700				

* Reference values in % by weight

Properties and typical applications

AMA is a free cutting and stamping brass. The addition of lead considerably increases the machinability, and the duplex structure of the alloy assures a good hot formability. This brass contains a very low amount of iron which can be useful for applications meeting non-magnetic specifications (military...).

Physical properties at 20°C		Heat treatment	
Density (g/cm ³)	8.4	Melting range (°C)	880-895
Young modulus (GPa)	98	Hot working (°C)	650-800
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	21	Annealing temperature (°C)*	450-600
Thermal conductivity (W/m.K)	117	Stress relieving treatment (°C)**	250-350
Thermal capacity (J/Kg.K)	377	<i>* Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i>	
Electrical conductivity (% I.A.C.S.)	27	<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	Excellent	Soldering	
Cold forming	Fair	Soft	Excellent
Machinability	90% (Ref: CuZn39Pb3 = 100%)	Hard	Good
Corrosion resistance		Welding	
Free-cutting brasses generally have good resistance to corrosion in organic materials and neutral or alkaline compounds. 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 in the presence of hot and acidic water.		Gaz welding	Not recommended
		Inert gas shielded arc welding	Not recommended
		Resistance welding	Not recommended

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	< 300	360	20	-
H070			-	-	-	70-100
R410	6	40	> 230	410	12	-
H100			-	-	-	100-145
R500	6	14	> 350	500	8	-
H120			-	-	-	> 120

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