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Material designation		Chemical composition*			
CuZn36Pb3		Elements	% mean	Impurities	% max.
		Cu	60.25	Fe	0.3
		Pb	2.75	Sn	0.20
				Ni	0.2
				Si	0.03
				Al	0.05
		Zn	balance	Other	0.2
EN 12164 / EN 12165 / EN 12167	CW603N				
NF A 51-105	CuZn36Pb3				
BS 2872-2874	CZ124				
ASTM B16	C36000				

* Reference values in % by weight

Properties and typical applications

It is a free cutting brass suitable for the production of different components by high-speed mechanical machining.

Physical properties at 20°C		Heat treatment	
Density (g/cm ³)	8.5	Melting range (°C)	885-900
Young modulus (GPa)	120	Hot working (°C)	700-800
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	21	Annealing temperature (°C)*	450-600
Thermal conductivity (W/m.K)	100	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	Good	Soldering	
Cold forming	Good	Soft	Excellent
Machinability	95% (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			
R340	10	80	< 280	340	20	-
H070			-	-	-	70-120
R400	6	25	> 200	400	12	-
H100			-	-	-	100-140
R480	6	14	> 350	480	8	-
H125			-	-	-	> 125

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.

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