

- High tensile lead free brass -

BL3

Material designation		Chemical composition*			
CuZn + classe 2		Elements	% mean	Impurities	% max.
		Cu	59	Pb	0.1
NFA 51-106 AIR 3370	CuZn + classe 2	Fe	1.1		
	CuZn36Ni3	Ni	2.3	Other	0.2
		Mn	1.3		
		Al	1.6		
		Zn	balance		





* Reference values in % by weight

Properties and typical applications
BL3 is a special lead free brass suitable for hot stamping and machining of parts requiring high mechanical strength.

Physical properties at 20°C		Heat treatment	
Density (g/cm ³)	8.3	Melting range (°C)	880-910
Young modulus (GPa)	105	Hot working (°C)	670-750
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	18	Annealing temperature (°C)*	500-600
Thermal conductivity (W/m.K)	57	Stress relieving treatment (°C)**	300-400
Thermal capacity (J/Kg.K)	380	<i>* Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i>	
Electrical conductivity (% I.A.C.S.)	12	<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	Fair	Soft	Not recommended
Machinability	55% (CuZn39Pb3 = 100%)	Hard	Not recommended
Corrosion resistance		Welding	
High tensile brasses generally exhibit good corrosion resistance to organic materials and neutral or alkaline compounds due to alloying elements.		Gaz welding	Fair
		Inert gas shielded arc welding	Not recommended
		Resistance welding	Not recommended

Mechanical properties according to NFA 51-106				
Diameter [mm]	Rp0,2 [Mpa]		Rm [Mpa]	A(%)
	from	to	min.	min.
6	12	300	600	7
12	25	280	570	8
25	50	260	550	9
50	80	250	530	10

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	