

## TMS

Material designation		Chemical composition*			
<b>CuZn37Pb0.5</b>		Elements	% mean	Impurities	% max.
		Cu	63.1	Fe	0.15
		Pb	0.5	Ni	0.1
				Sn	0.1
EN 12164	CW604N				
ASTM B453	C33500				
		Zn	balance	Other	0.15

\* Reference values in % by weight

### Properties and typical applications

CW604N is a free cutting and cold deformation brass. It can also be hot worked to make stamped parts.  
Crimping, riveting, screws, bolts, etc.





Physical properties at 20°C		Heat treatment	
Density (g/cm <sup>3</sup> )	8.4	Melting range (°C)	900-925
Young modulus (GPa)	104	Hot working (°C)	650-750
Thermal expansion coefficient (20-300°C) (10 <sup>-6</sup> /K)	21	Annealing temperature (°C)*	450-600
Thermal conductivity (W/m.K)	115	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.)	26	<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	<b>Soldering</b>	
Cold forming	Very good	Soft	Excellent
Machinability	70% (Ref: CuZn39Pb3 = 100%)	Hard	Good
<b>Corrosion resistance</b>		<b>Welding</b>	
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 (indicative values)

Yield Strength Rp <sub>0,2</sub> [Mpa]	> 200
Tensile Strength Rm [Mpa]	> 360
Elongation [%]	> 15
Hardness [HB]	> 100

### 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. <a href="mailto:info@m-lego.com">info@m-lego.com</a>				