



**Pb < 0,1%  
0% Cadmium  
RoHS & ELV ok**

CS 60001 72401 LA FERTE BERNARD cedex  
France  
Tél : +33 (0)2 43 60 60 65  
Fax : +33 (0)2 43 93 55 03  
[info@m-lego.com](mailto:info@m-lego.com)

# CW719R

# - Naval Brass, Lead Free -

# SN1

Material designation		Chemical composition*			
<b>CuZn39Sn1</b>		Elements	% mean	Impurities	% max.
EN 12163 / 12165 / 12167		Cu	60	<b>Pb</b>	<b>0.1</b>
BS 2874		Sn	0.75	Fe	0.1
ASTM B21				Ni	0.2
DIN 17660		Zn	balance	Other	0.35
CW719R		* Reference values in % by weight			
CZ133					
C46400					
CuZn38Sn1					

**Properties and typical applications**

Alloy known under the name "Naval Brass" because of its high resistance to corrosion in seawater. It has good mechanical properties. Naval Brass is widely used in marine applications.

Physical properties at 20°C		Heat treatment	
Density (g/cm <sup>3</sup> )	8.3	Melting range (°C)	885-910
Young modulus (GPa)	93	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)	116	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.)	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	Fair	Soft	Excellent
Machinability	45% (CuZn39Pb3 = 100%)	Hard	Good
<b>Corrosion resistance</b>		<b>Welding</b>	
The addition of tin considerably improves the corrosion resistance, especially in sea water and slightly aggressive environments.		Gaz welding	Good
		Inert gas shielded arc welding	Not recommended
		Resistance welding	Fair

Mechanical properties according to EN12163						
Condition of material	Diameter [mm]		Rp0,2 [Mpa] min.	Rm [Mpa] min.	A(%) min.	Hardness HB
	from	to				
<b>M</b>	All		As extruded - without specific mechanical properties			
<b>R340</b>	6	80	140	340	20	-
<b>H080</b>			-	-	-	80-120
<b>R400</b>	6	50	180	400	15	-
<b>H105</b>			-	-	-	105-145
<b>R450</b>	6	25	200	450	20	-
<b>H120</b>			-	-	-	120-160

**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](mailto:info@m-lego.com)