

AL7

Material designation		Chemical composition*			
CuAl7Si2		Elements	% mean	Impurities	% max.
		Si	1.7	Pb	0.05
		Al	6.8	Fe	0.3
				Sn	0.2
				Ni	0.25
				Mn	0.1
		Cu	Balance	Others	0.2
ASTM B150	C64210				
EN 12163 (version 1998)	CW302G				
EN 12165 (version 1998)	CW302G				
EN 12167 (version 1998)	CW302G				

* Reference values in % by weight

Properties and typical applications

AL7 is a single-phase alloy with excellent corrosion and wear resistances. The addition of silicon improves the mechanical properties as well as the machinability of the material. Used in watchmaking industry for example.

Physical properties at 20°C		Heat treatment	
Density (g/cm ³)	7.7	Melting range (°C)	985-1005
Young modulus (GPa)	110	Hot working (°C)	850-900
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	18	Annealing temperature (°C)*	650-750
Thermal conductivity (W/m.K)	45	Stress relieving treatment (°C)**	300-400
Thermal capacity (J/Kg.K)	430	<i>* Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i>	
Electrical conductivity (% I.A.C.S.)	8	<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	Not recommended
Machinability	80% (CuZn39Pb3 = 100%)	Hard	Fair
Corrosion resistance		Welding	
The bronzes of aluminum have a high corrosion resistance, in particular in the sea environments.		Gaz welding	Not recommended
		Inert gas shielded arc welding	Good
		Resistance welding	Good

Mechanical properties according to EN 12163						
Condition of material	Diameter [mm]		Rp0,2 [Mpa] min.	Rm [Mpa] min.	A(%) min.	Hardness HB
	from	to				
M	All		As extruded - without specific mechanical properties			
R500	8	80	(250)	500	20	-
H120			-	-	-	120-150
R600	8	40	(350)	600	12	-
H140			-	-	-	> 140

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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