

# D1

Material designation		Chemical composition*			
<b>CuAl9</b>		Elements	% mean	Impurities	% max.
		Ni	0.1	Pb	0.1
		Mn	0.5	Fe	0.1
		Al	9.3	Si	0.1
		Cu	Balance	Others	0.3
NF A 51-116	CuAl9				

\* Reference values in % by weight

## Properties and typical applications

Aluminium bronze. Nuts, screws, bolts...

Physical properties at 20°C		Heat treatment	
Density (g/cm <sup>3</sup> )	7,6	Melting range (°C)	1035-1050
Young modulus (GPa)	120	Hot working (°C)	850-900
Thermal expansion coefficient (20-300°C) (10 <sup>-6</sup> /K)	18	Annealing temperature (°C)*	650-750
Thermal conductivity (W/m.K)	63	Stress relieving treatment (°C)**	300-400
Thermal capacity (J/Kg.K)	418	<i>* Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i>	
Electrical conductivity (% I.A.C.S.)	13	<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	Good	Soft	Not recommended
Machinability	40% (CuZn39Pb3 = 100%)	Hard	Fair
<b>Corrosion resistance</b>		<b>Welding</b>	
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 NF A 51-116						
Condition of material	Diameter [mm]		Rp0,2 [Mpa]	Rm [Mpa]	A(%)	Hardness HB
	from	to				
<b>H ou M2 (Hardened or as-extruded)</b>	6	25	180	460	15	125
	25	50	170	450	20	115
	50	80	160	440	25	105

## 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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