

D3

Material designation		Chemical composition*			
CuAl9Mn6Ni2Fe2		Elements	% mean	Impurities	% max.
		Fe	0.8	Pb	0.05
NF A 51-116		Ni	1	Sn	0.1
		Mn	5	Si	0.1
		Al	8.9	Zn	0.5
CuAl9Mn6Ni2Fe2		Cu	Balance	Others	0.1

* Reference values in % by weight

Properties and typical applications

Aluminium bronze. Heating systems, connetions for fluids, faucets...

Physical properties at 20°C		Heat treatment	
Density (g/cm ³)	7,6	Melting range (°C)	1040-1050
Young modulus (GPa)	120	Hot working (°C)	850-900
Thermal expansion coefficient (20-300°C) (10 ⁻⁶ /K)	16	Annealing temperature (°C)*	650-750
Thermal conductivity (W/m.K)	29	Stress relieving treatment (°C)**	300-400
Thermal capacity (J/Kg.K)	420	<i>* Annealing treatment of a material leads to reduce its hardness and increase its ductility.</i>	
Electrical conductivity (% I.A.C.S.)	5	<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	Not recommended	Soft	Not recommended
Machinability	40% (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 NF A 51-116

Condition of material	Diameter [mm]		Rp0,2 [Mpa] min.	Rm [Mpa] min.	A(%) min.	Hardness HB
	from	to				
H ou M2 (Hardened or as-extruded)	6	25	280	640	15	165
	25	50	270	640	16	160
	50	80	250	620	16	155

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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