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CuAl9Ni3Fe2 M3

Nearest international Standards	
m Lego	M3
NF A 51-116	CuAl9Ni3Fe2
GAM MM 11	CuAl9Ni3Fe2
ST 554.010A	CuAl9Ni3Fe2
EN 12165	CW304G
DIN 17665	CuAl9Ni3Fe2-2.09

Nominal Composition			
Elements	% mean	Impurities	% max.
Fe	1.5	Pb	0.05
Ni	2.2	Sn	0.10
Mn	1.3	Si	0.10
Al	8.7	Zn	0.30
		Other	0.10
Cu	Balance	Total maxi	

Typical uses
Copper Aluminium. Fittings

Physical Properties at 20° C	
Density (g/cm3)	7.6
young's Modulus (Gpa)	125
Coulomb's Modulus (Gpa)	44
Coefficient of Linear Expansion (20-300°C)	16
Coefficient of friction (slip)	
Coefficient of friction (adhesion)	

Thermal Properties	
Thermal Conductivity (W/m.K)	42
Thermal Capacity (J/Kg.K)	419
Melting Range (°C)	1050-1070
Stress Relief Temperature (°C)	300-400
Hot Stamping Temperature (°C)	800-925
Annealing Temperature (°C)	625-825

Properties	Mechanical						Electrical	
Reference Diam. Ø 20 mm	Rp 0,2 (Mpa)	Rm (Mpa)	A (%)	HB	HV	Impact Strenght (daJ/cm2)	Conductivity (% I.A.C.S.)	Resistivity (-.cm)
Drawn / treated	400	640	27	170		4.7	9	19
Extruded	250	550	40	130		7.5		

Different General Capabilities		
Hot Working	75	Very Good
Cold Working	20	Satisfactory
Free Cutting	40	Moderate
Corrosion Resistance	Excellent	

General Capabilities: 45%

Profile and flat dimensions on request

Welding and Brazing Capacities	
Brazing	
Soft	Not recommended
Strong	Satisfactory
Welding	
Oxy-acetylene	Not recommended
Gas-shielded arc	Good
Coated metal-ard	Good
Carbon arc	Satisfactory
Resistance	Good

Fabrication Range (mm)			
	Round	Square	Hexagonal
Turned billet			
Extruded	from 10 to 80		
Drawn / treated	from 6 to 80		from 8 to 70