

Nickel Alloys - Alloy 718

Round Bar

Properties

Stock		Chemical Properties	
Diameter (in)	Weight kg/m	Element	Chemical Composition %
1	4.17	Aluminium (Al)	0.4 - 0.6 max
1 1/4	6.51	Boron (B)	0.006
1 1/2	9.37	Carbon (C)	0.045
1 3/4	12.76	Cobalt (Co)	1.0
2	16.66	Chromium (Cr)	17 - 21 max
2 1/4	21.09	Copper (Cu)	0.15
2 1/2	26.03	Iron (Fe)	6.6 - 19.3 max
2 3/4	31.50	Manganese (Mg)	0.35
3	37.49	Niobium (Nb)	4.9 - 5.2 max
3 1/4	43.99	Nickel (Ni)	50 - 55 max
3 1/2	51.02	Phosphorus (P)	0.01
3 3/4	58.57	Lead (Pb)	0.0005
4	66.64	Sulphur (S)	0.01

Silicon (Si)	0.35
Tantalum (Ta)	0.05
Titanium (Ti)	1.15

Mechanical Properties

Property	Value
Ultimate Tensile Strength	1275 N/mm ²
0.2% Proof Stress	1034 N/mm ²
Elongation	6%
Hardness HRC (max)	40

Physical Properties

Property	Value
Density (Kg/m-1)	82.3
Magnetic Permeability (20°C)	<1.002
Young's Modulus (N/mm ²)	200 x 10
Specific Heat, 20°C	435
Specific Electrical Resistance, 20°C	1.25
Thermal conductivity, 20°C	11.1
Mean coefficient of thermal expansion, 20-100 °C	12.1 x 10

Disclaimer

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