

AMS5663 - Alloy 718

Chemical Properties

Element	Chemical Composition %
Nickely + Cobalt (Ni+Co)	50.0 - 55.0
Chromium (Cr)	17.0 - 21.0
Columbium + Tantalum (Cb+Ta)	4.75 - 5.50
Molybdenum (Mo)	2.80 - 3.30
Titanium (Ti)	0.65 - 1.15
Aluminium (Al)	0.20 - 0.80
Cobalt (Co)	1.00 max
Carbon (C)	0.08 max
Manganese (Mn)	0.35 max
Silicon (Si)	0.35 max
Phosphorous (P)	0.015 max
Sulphur (S)	0.015 max
Boron (B)	0.006 max
Copper (Cu)	0.30 max
Iron (Fe)	Balance

Mechanical Properties

Property	Value
Ultimate Tensile Strength, ksi	135
0.2% Yield Strength, ksi	70
Elongation (%)	45
Hardness, Rockwell B	100
Typical Room Temperature Properties, 1800 °F Annealed Condition	

Physical Properties

Property	Value								
Density	0.296 lb/in ³ annealed	0.274 lb/in ³ aged							
Melting Point	2410 - 2540 °F								
Temperature, °F	-320	70	200	400	600	1000	1200	1400	
Coefficient of Thermal Expansion, in/in °F x 10 ⁻⁴	5.9	-	7.3	7.5	7.7	8.1	8.4	8.9	
Thermal Conductivity Btu ft/ft ²	-	6.4	7.2	8.2	9.3	11.3	12.3	13.3	
Modulus of Elasticity, Dynamic psi x 10 ⁶	-	29	28	27	26	25	24	22	

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