

Material Properties

Table displays the average tested values

Tensile Data	
Ultimate Strength	X & Y: 1310 MPa Z: 1331 MPa
Yield Strength	X & Y: 1069 MPa Z: 1076 MPa
Elongation	X & Y: 15% Z: 15%
Elastic Modulus	X & Y: 193 GPa Z: 193 GPa
Hardness	41 HRC
Impact	12.2 J
Poisson's Ratio	0.29
Relative Density	99.2%
Density	8.13 g/cc
Surface Roughness	3.6 $\mu\text{m Ra}$

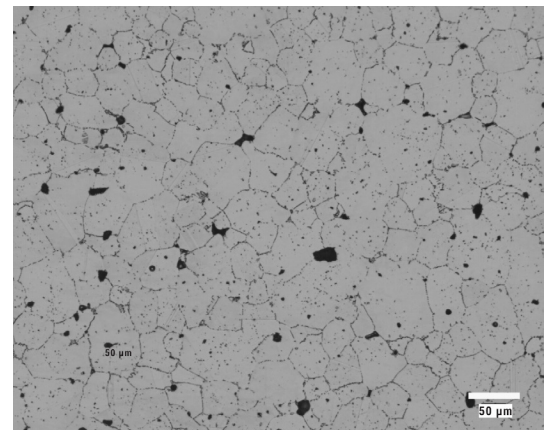


Inconel 718 Printed Parts

Table displays the average tested values. Material properties tested after solution annealing and aging heat treatments. Heat treating profile in accordance with AMS 5662.

Material Composition	UNS N07718 ASTM B637-18 (wt%)
Nickel	50.0 - 55.0
Chromium	17.0 - 21.0
Iron	Balance
Niobium+ Tantalum	4.75 - 5.50
Molybdenum	2.80 - 3.30
Titanium	0.65 - 1.15
Aluminum	0.20 - 0.80
Carbon	0.04 - 0.13*
Cobalt	1.00 max
Manganese	0.35 max
Silicon	0.35 max
Copper	0.30 max
Phosphorus	0.015 max
Sulfur	0.015 max
Boron	0.006 max

* The wt% of carbon in the as-sintered state is < 0.08%. Final carbon results are dependent upon the secondary heat treating conditions



Microstructure

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