



Inconel 718

Description: Nickel Alloy Inconel 718 is a nickel-based, heat-resistant alloy in fine powder form. This kind of precipitation-hardening, nickel-chromium alloy is characterized by having good tensile, fatigue, creep, and rupture strength at temperatures up to 1300°F. Nickel Alloy Inconel 718 also has outstanding corrosion resistance in various corrosive environments.

Applications:

- Aero- and land-based turbine engine parts
- Rocket and space application components
- Chemical and process industry parts
- Oil well, petroleum, and natural gas industry parts

Carbon (C) = max 0.08%	Boron (B) = max 0.006%	Tantalum (Ta) = max 0.05%
Silicon (Si) = max 0.35%	Manganese (Mn) = max 0.35%	Copper (Cu) = max 0.30%
Sulfur (S) = max 0.015%	Phosphorus (P) = max 0.015%	Titanium (Ti) = 0.65-1.15%
Nickel (Ni) = 50.00-55.00%	Chromium (Cr) = 17.00-21.00%	Iron (Fe) = remainder
Niobium (Nb) = 4.75-5.50%	Molybdenum (Mo) = 2.80-3.30%	
Aluminum (Al) = 0.20-0.80%	Cobalt (Co) = max 1.00%	

Stress Relief: Stress relieve at 1950°F for 1.5 hours

Heat Treatment (HT): (OPTIONAL) – Heat Treatment to AMS 5662.

Hot Isostatic Pressing (HIP): (OPTIONAL)

			3DMT MATERIAL DATA		
Horizontal	AMS 5596, 5662,5663 (Min Requirement)	Typical Wrought	MLS (Stress Relief)		MLS (SHT & HIP)
0.02% Yield (ksi)	150	165-180	124.2		164.2
Ultimate Tensile (ksi)	180-185	192-208	167.7		202.2
Elongation (%)	6-12	17-22	30.6		16.4
Hardness (HRC)	35.5	40-46	38-36		42.5

The data above is general information that may vary from machine to machine and supplier to supplier.