

ALLOY 718 - UNS N07718 - AMS 5663

MATERIAL DESCRIPTION

Alloy 718 (UNS N07718) is a precipitation-hardening, Ni-base alloy with excellent strength, good ductility, good weldability, good formability, and excellent cryogenic properties. Produced by vacuum induction melting followed by consumable remelting (vacuum arc or electroslag).

APPLICABLE SPECIFICATIONS

AMS 5663

ASTM B637, ASME BPVC.II.B SB637

UNS N07718, NiCr19MoNb

HEAT TREATMENT

Intoco bar stock is in the Solution Annealed & Age Hardened condition

CHEMICAL ANALYSIS RANGE

ELEMENT	WEIGHT %	ELEMENT	WEIGHT %
C	0.08 max.	Ti	0.80 - 1.15
Mn	0.35 max.	Fe	Balance (a)
P	0.015 max.	Al	0.20 - 0.80
S	0.015 max.	Mo	2.80 - 3.30
Si	0.35 max.	Co	1.00 max.
Ni	50.0 - 55.0	Cu	0.30 max.
Cr	17.0 - 21.0	B	0.0060max. (60 ppm)
		(Cb+Ta or Nb+Ta)	4.75 - 5.50

TYPICAL MECHANICAL PROPERTIES (Min unless stated)

0.2% Yield ksi (MPa)	UTS ksi (MPa)	Ductility		Hardness HBW
		%EI 4D	%RA	
RTT - 150 (1034) ETT - 125 (862)	RTT - 185 (1275) ETT - 145 (1000)	RTT - 12 ETT - 12	RTT - 15 ETT - 15	331

RTT – Room Temperature Tensile

ETT – Elevated Temperature Tensile (1200°F / 649°C)

Stress-Rupture Properties at 1200 °F (649 °C)

Load ksi	Test Duration	Elongation after Rupture- %EI 4D
100	≥23Hours	>4%

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