PRODUCT DATASHEET

718

Grade

Alloy718 (UNS NO7718, ASTM B637, API 6A CRA 1st Edition Addendum 3)

Type

Solution annealed and age hardened Nickel alloy.

Overview

Grade has very high strength and 140 ksi (40HRC Maximum) and 150ksi (45HRC Maximum) yield strengths can be achieved with modified aging cycle as per API 6ACRA Issue 1 Addendum 3, excellent subzero impact properties even at higher strengths.

Excellent corrosion resistance and so is used in a range of severe corrosive environments for applications such as hangers, gates and stems.

Maximum hardness shown is based on compliance with NACE MR0175 / ISO 15156.

Composition	
Element	**Weight%**
Carbon	0.045 max
Silicon	0.35 max
Manganese	0.35 max
Phosphorus	0.01 max
Sulphur	0.01 max
Molybdenum	2.8 - 3.3
Chromium	17 - 21
Nickel	50 - 55
Aluminium	0.4 - 0.6
Titanium	0.8 - 1.15
Manganese	0.35 max
Niobium	4.87 - 5.2
Tantalum	4.87 - 5.2
Copper	0.23 max
Cobalt	1 max

Mechanical Propeties

Solution annealed followed by age hardening

Property	Values
0.2% Yeild Strength	120 KSI min (827 MPA min)
Ultimate Tensile Strength	150 KSI min (1034 MPA min)
Elongation	20
Reduction of area	≤10" 35% min / >10" 25%
Charpy Impact Toughness	< 3" 68J ave / 61J single / 0.38mm lats (L) ≥3" - 10" 47J ave /41J single / 0.38mm lats (T) >10" 41J ave / 37J single / 0.38mm lats (T) all at -60°C
Hardness	40 HRC max

Notes: L = Longitudinal direction, T = Transverse direction