

Grade: Alloy 946 (UNS N09946, API 6A CRA 1st Edition Addendum 3)

Type: Corrosion resistant high strength alloy normally supplied in the solution annealed and precipitation age hardened condition.

Nominal Composition	
Element	Weight %
Carbon	0.005 – 0.03
Silicon	0.5 max
Manganese	1.0 max
Phosphorus	0.02 max
Sulphur	0.01 max
Molybdenum	3.0 – 4.0
Chromium	19.5 – 22.5
Nickel	52.0 – 55.0
Copper	1.5 – 3.0
Niobium	3.8 – 4.5
Titanium	0.5 – 2.5
Aluminium	0.01 – 0.7
Iron	Balance

Mechanical Properties:

946, solution annealed and aged condition

Property	Values
Ultimate Tensile Strength	165 min Ksi (1138Mpa)
0.2 % Yield Strength	140 min Ksi (965Mpa)
Elongation	18 % min
Reduction of Area	≤10" 25% min / >10" 20%
CVN @ -60°C * see notes	< 3" 61J ave / 54J single / 0.38mm lats (L) ≥3" - 10" 47J ave / 41J single / 0.38mm lats (T) >10" 41J ave / 37J single / 0.38mm lats (T)
Hardness	NACE (42HRC max)



Notes

Notes:

L = Longitudinal direction, T = Transverse direction