

Alloy 716 (UNS N07716) – API 6ACRA 1ST Edition Addendum 3

Grade: Alloy 716 (UNS N07716, API 6A CRA 1st Edition Addendum 3)

Type: Solution annealed and age hardened Nickel alloy

Nominal Composition	
Element	Weight %
Carbon	0.030 max
Silicon	0.20 max
Manganese	0.20 max
Phosphorus	0.015 max
Sulphur	0.010 max
Molybdenum	7.0 – 9.5
Chromium	19.0 – 22.0
Nickel	59.0 - 63.0 max
Aluminium	0.35 max
Titanium	1.0 – 1.6
Niobium	2.75 – 4.00
Iron	Balance
Boron	0.006 max
Copper	0.23 max
Lead	0.001 max

Notes

Mechanical Properties Condition: Solution annealed followed by age hardening

Property	Values*
Ultimate Tensile Strength	150 min Ksi (1034Mpa)
0.2 % Yield Strength	120 min Ksi (827Mpa)
Elongation	20 % min
Reduction of Area	≤10" 35% min / >10" 25% min
CVN @ -60°C * see notes	< 3" 54J ave / 47J single / 0.38mm lats (L) ≥3" - 10" 50J ave / 43J single / 0.38mm lats (T) >10" 43J ave / 37J single / 0.38mm lats (T)
Hardness	43 HRC max

Notes:

*Also available in 140 min Ksi yield

L = Longitudinal direction, T = Transverse direction

Notes:

A precipitation hardenable Nickel-Chromium-Molybdenum based super alloy with high strength combined with excellent corrosion resistance. Offers resistance to stress corrosion cracking, general pitting and crevice corrosion.

Excellent corrosion resistance and so is used in a range of severe corrosive environments for applications such as fasteners, shafts and hangers. Also used in marine environments, refining and chemical processing.

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