

INCONEL® X-750

Chemical Composition			Specifications	Key Features	Typical Applications
Element	Min %	Max %	AMS 5667 AMS 5671 AMS 5698 (No 1 Spring Temper) AMS 5699 (Spring Temper) ASTM B637 BS HR 505 GE B14H41 ISO 15156-3 (NACE MR 0175)	Good creep rupture strength at high temperatures Not as strong as Nimonic 90 Very good at cryogenic temperatures Age hardenable ^^High temperature dynamic applications	Nuclear reactors Gas turbines Rocket engines Pressure vessels Aircraft structures
C	-	0.08			
Mn	-	1.00			
Si	-	0.50			
S	-	0.01			
Cr	14.00	17.00			
Ni	70.00	-			
Nb/Cb	0.70	1.20			
Ti	2.25	2.75			
Al	0.40	1.00			
			Designations		
Fe	5.00	9.00	W.Nr. 2.4669		
Co	-	1.00	UNS N07750		
Ta	-	0.05	AWS 014		
Cu	-	0.50			

Density	8.28 g/cm ³	0.299 lb/in ³
Melting Point	1430 °C	2600 °F
Coefficient of Expansion	12.6 µm/m °C (20 – 100 °C)	7.0 x 10 ⁻⁶ in/in °F (70 – 212 °F)
Modulus of Rigidity	75.8 kN/mm ²	10994 ksi
Modulus of Elasticity (Spring Temper + Aged) (Spring Temper + 3 Part Heat Treated) (No.1 Spring Temper + Aged)	218.0 kN/mm ² 212.4 kN/mm ² 213.7 kN/mm ²	31619 ksi 30806 ksi 30995 ksi

Heat Treatment of Finished Parts					
Condition as supplied by Alloy Wire	Type	Temperature		Time (Hr)	Cooling
		°C	°F		
Spring Temper	Age Harden	650	1200	4	Air
Spring Temper (3 Part)	Anneal	1150	2100	2 ★★	Air
	Stabalize	843	1550	24	Air
	Age Harden	704	1300	20	Air
No. 1 Temper	Age Harden	730	1350	16	Air

Properties				
Condition	Approx. tensile strength		Approx. operating temperature depending on load^^ and environment	
	N/mm ²	ksi	°C	°F
Annealed	800 – 1000	116 – 145	-	-
No. 1 Temper	900 – 1150	130 – 167	-	-
Spring Temper	1100 – 1500	160 – 218	-	-
No. 1 Temper + Aged	1300 – 1450	188 – 210	-200 to +550	-330 to +1020
Spring Temper + Aged	1350 – 1750	196 – 254	-200 to +370	-330 to +700
Spring Temper + 3 part heat treated	1100 – 1250	159 – 181	-200 to +550	-330 to +1020

The above tensile strength ranges are typical. If you require different please ask.

★★ for diameters below 1.00mm contact AWI Technical department ^^Dynamic applications = active/lively/changing