Technical Datasheet **AWS 030 Rev.2**

NIMONIC® 90

Chemical Composition		
Element	Min %	Max %
Ni	BAL	
Cr	18.00	21.00
Fe	-	1.50
Ti	2.00	3.00
Mn	-	1.00
Si	-	1.00
C	-	0.13
Al	1.00	2.00
Co	15.00	21.00
S	-	0.015
Cu	-	0.20
B	-	0.02
Pb	-	0.002
Zr	-	0.15
Ag	-	0.0005
Bi	-	0.0001

Specifications

AMS 5829
BS HR 501
BS HR 502
BS HR 503
BS 3075 NA 19
ISO 15156-3
(NACE MR 0175)
NCK 20TA

Designations

W.Nr. 2.4632
W.Nr. 2.4969
UNS N07090
AWS 030

Key Features

High stress rupture strength and high creep resistance at high temperatures

Good resistance to high-temperature corrosion and oxidation

Age hardenable

^^High temperature dynamic applications

Typical Applications

Aerospace fasteners

Density	8.18 g/cm^3	0.296 lb/in^3
Melting Point	1370 °C	2500 °F
Coefficient of Expansion	12.7 µm/m °C (20 – 100 °C)	7.1 x 10^{-6} in/in °F (70 – 212 °F)
Modulus of Rigidity	82.5 kN/mm^2	11966 ksi
Modulus of Elasticity *(Annealed + Aged)* *(Spring Temper + Aged)*	213 kN/mm^2 227 / 240 kN/mm^2	30894 ksi 32924 / 34810 ksi

Heat Treatment of Finished Parts

Condition as supplied by Alloy Wire	Type	Temperature		Time (Hr)	Cooling
		°C	°F		
Annealed	Age Harden	750	1380	4	Air
Spring Temper	Age Harden	650	1200	4	Air
Spring Temper	Age Harden	600	1100	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	-	-
Annealed + Aged	1200 – 1400	174 – 203	up to 550	up to 1020
Spring Temper	1200 – 1500	175 – 218	-	-
Spring Temper + Aged	1500 – 1800	218 – 261	up to 350	up to 660

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

^^**Dynamic applications** = *active/lively/changing*