

Inconel 690

UNS N06690

W.Nr. 2.4642

Nickel

Chromium

Iron

<https://www.arialloy.com/inconel-690/>

• Chemical Composition •

Ni%	Cr%	Fe%	Mn%
≥ 58.0	27.0 ~ 31.0	7.0 ~ 11.0	≤ 0.5
C%	Cu%	Si%	S%
≤ 0.05	≤ 0.5	≤ 0.5	≤ 0.015

• Mechanical Properties •

Product	Condition	T.S.	Y.S.	EL	RA	Hardness
		MPa, min	MPa, min	%, min	%, min	HR
Seamless Pipe & Tube	≤ 127mm Hot-worked	586	205	35	...	...
	≥ 127mm Hot-worked	515	170	35	...	...
	≤ 127mm Cold-worked	586	240	30	...	...
	≥ 127mm Cold-worked	586	205	35	...	...
Welded Tube	All	586	240	30	...	...
Round Bar	≤ 12.7mm Cold-worked	825	620	7	...	...
	12.7 ~ 25.4mm Cold-worked	760	585	10	...	...
	25.4 ~ 63.5mm Cold-worked	725	550	12	...	...
	6.4 ~ 12.7mm Hot-worked	655	310	20	...	...
	12.7 ~ 76.2mm Hot-worked	620	275	25	...	...
	≥ 76.2mm Hot-worked	585	240	30	...	...
	Annealed	586	240	30	...	...
	≤ 6.4mm Cold-worked	690	550	5	...	...
Flat Bar Square Bar Hexagon Bar	6.4 ~ 12.7mm Cold-worked	655	480	7	...	...
	Hot-worked	585	240	20	...	...
	Annealed	586	240	30	...	...
	Hot-worked	585	240	20	...	...

Product	Condition	T.S.	Y.S.	EL	RA	Hardness
		MPa, min	MPa, min	%, min	%, min	HR
Wire	≤ 0.81mm Annealed	552 ~ 793	...	...	...	...
	≥ 0.81mm Annealed	552 ~ 724	...	...	...	...
Spring Wire	≤ 1.45mm	1276	...	...	...	...
	1.45 ~ 2.90mm	1207	...	...	...	...
	2.90 ~ 5.82mm	1172	...	...	...	...
	5.82 ~ 8.36mm	1130	...	...	...	...
	8.36 ~ 9.53mm	1103	...	...	...	...
	9.53 ~ 12.7mm	1069	...	...	...	...
	12.7 ~ 14.3mm	965	...	...	...	...
Sheet & Plate	Annealed	550	240	30	...	...
Sheet	Hard	860	620	2	...	...
Strip	Annealed	586	240	30	...	...
	Skin-hard	...	...	...	...	B85 ~ B88
	Quarter-hard	...	...	...	...	B88 ~ B94
	Half-hard	...	...	...	...	B93 ~ B98
	Three-quarter-hard	...	...	...	...	B97 ~ C25
	Hard	860	620	2	...	...
	Spring	...	...	...	...	≥ C30

• Physical Properties •

Density		Melting Range	
lb/in ³	g/cm ³	°F	°C
0.296	8.19	2450 ~ 2510	1343 ~ 1377

• Main Standards •

Rod, Bar, Wire & Forging Stock	Plate, Sheet & Strip	Pipe & Tube	Fitting	Welding Products
ASTM B166 ASME SB 166 ASTM B564 ASME SB 564	ASTM B168 ASME SB 168 ASTM B906 ASME SB 906	ASTM B163/ASME SB 163 ASTM B167/ASME SB 167 ASTM B829/ASME SB 829 ASTM B516/ASME SB 516 ASTM B751/ASME SB 751	ASTM B366 ASME SB 366	AWS A5.14/ ERNiCr-7 AWS A5.11/ ENiCr-7