

Hastelloy® alloy C-22

UNS N06022
W.Nr 2.4602

Hastelloy® alloy C-22 is a Nickel-Chromium-Molybdenum alloy with excellent corrosion resistance to a wide variety of environments. It is also resistant to oxidation, pitting, crevice corrosion, intergranular attack, and stress corrosion cracking. Applications include springs, fasteners, seals, medical devices, and components used in flue gas equipment. Industries supplied include: Chemical Processing, Oil & Gas Extraction, and Power Generation.

Nominal Composition

	Cr	Mo	Fe	W	Co	Ni	V	C	Mn	S	Si
min	20	12.5	2	2.5							
max	22.5	14.5	6	3.5	2.5	balance	0.35	0.015	0.50	0.02	0.08

Physical Properties

	At 70°F	At 20°C
Density	0.311 lb/in ³	8.61 g/cm ³
Modulus of Elasticity (E)	29.9 x 10 ³ ksi	206 GPa
Modulus of Rigidity (G)	11.4 X 10 ³ ksi	79 GPa
Coefficient of Expansion	7 microinches/in.-°F (70-600°F)	12.6 µm/m-°C (20-300°C)
Electrical Resistivity	44.8 µ ohm.in	114 µ ohm.cm
Thermal Conductivity	91 Btu-in./ft. ² hr.-°F	13.2 W/m-K

Applicable Specifications

Wire & Bar ASTM B574, AWS A5.14, NACE MR0175 (ISO 15156-3).

Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2048°F (1120°C)	110 – 150 ksi (758 – 1034 MPa)	-330°F to 750°F (-200°C to 400°C)
Spring Temper		200 – 240 ksi (1379 – 1655 MPa)	-330°F to 750°F (-200°C to 400°C)

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