



Elgiloy Specialty Metals – Strip Products

MP35N[®] alloy

UNS R30035
W. Nr 2.4999

Applicable Specifications

Strip and Foil ASTM F688, NACE MR0175/ISO 15156, NACE MR0103

Description: MP35N[®] is a non-magnetic Cobalt-Nickel-Chromium-Molybdenum alloy having an excellent combination of very high strength, excellent corrosion resistance and high fatigue strength. MP35N[®] is highly resistant to sulfide stress corrosion cracking and provides excellent performance in the most demanding sour well environments. In seawater MP35N[®] is virtually immune to crevice and stress corrosion and pitting even at the highest strength levels and can operate at cryogenic temperatures up to 850°F (454°C).

Applications include: Seals, springs, medical devices & implants

Industries supplied include: Oil & Gas Extraction, Medical & Dental, Aerospace, Defense and Space Exploration

Nominal Composition

	Co	Ni	Cr	Mo	C	Fe	Mn	P	S	Si	Ti
min	bal	33	19	9	-	-	-	-	-	-	-
max	-	37	21	10.5	0.025	1.0	0.15	0.015	0.01	0.15	1.0

Physical Properties

	At 70°F	At 20°C
Density	0.304 lb/in ³	8.42 g/cm ³
Modulus of Elasticity (E)	33.8 x 10 ³ ksi	233 GPa
Modulus of Rigidity (G)	12.1 x 10 ³ ksi	83.4 GPa
Coefficient of Expansion	8.2 microinches/in-°F (70-600°F)	14.8 x μm/m-°C (20-300°C)
Electrical Resistivity	40.6 μohm-in	103 μohm-cm
Thermal Conductivity	78 Btu-in/ft ² hr-°F	11.2 W/m-K

Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1900-2150°F (1040-1175°C)	115-135 ksi (790-930 MPa)	-300°F to 800°F (-184°C to 427°C)
Spring Temper	(Stress relieve as needed)	200 ksi min (1380 MPa)	-300°F to 800°F (-184°C to 427°C)
Spring Temper + Aged	1000-1200°F	275 ksi min (1900 MPa)	-300°F to 800°F (-184°C to 427°C)

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