

MP35N® Nickel Cobalt Alloy

MP35N® NICKEL COBALT ALLOY DATASHEET

MP35N® is a Multiphase® cobalt nickel-based superalloy, consisting of 35% Nickel and 35% Cobalt. MP35N® is produced using a 2-step melting process, the first step is a vacuum induction melted (VIM), this is then followed by vacuum arc remelted (VAR). This 2-step melt process ensures superior cleanliness and minimizes non-metallic inclusions and residual elements (such as carbon), that have deleterious effects on mechanicals and corrosion resistance. MP35N® can be aged to increase mechanical properties beyond those of stainless and nickel alloys, without sacrificing corrosion resistance. MP35N® can be supplied per AMS 5844 (Sol Treated and Cold Worked), and can then be age hardened to increase mechanical properties.

Common industry/applications are: Sour Gas, Aerospace, Oil & Gas, Cryogenic, Medical & Dental equipment.

Product forms include round bar.

Standards

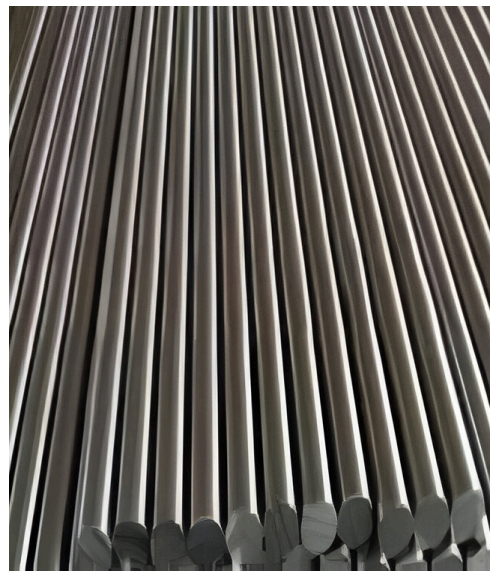
- UNS R30035
- AMS 5844
- AMS 5845

Physical Properties

- Density: 0.304LB/in³ (8.43g/cm³)
- Melting Point: 2399–2620°F (1315–1440°C)
- Modulus of Elasticity: 34.0x10⁶psi (234 GPa)

Characteristics

- Excellent corrosion resistance.
- Superior strength and toughness.
- Non-Magnetic.



Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	Mo	Ti	Fe
MIN	-	-	-	-	-	19.00	33	9	-	-
MAX	0.025	0.15	0.015	0.15	0.01	21.00	37	10.50	1.00	1.00

Note - Co: Remainder

Mechanical Properties

AMS	Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) %	Hardness HRC (BHN)
5845 *	260 (1793)	230 (1586)	8%	35%	44 (409)

* After aging from AMS5844 to AMS5845

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