

MP35N® Nickel Cobalt Alloy

MP35N® NICKEL COBALT ALLOY DATASHEET

MP35N® Nickel Cobalt Alloy is a Multiphase® cobalt nickel-based superalloy, consisting of 35% Nickel and 35% Cobalt. MP35N Nickel Cobalt Alloy 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 Nickel Cobalt Alloy can be aged to increase mechanical properties beyond those of stainless and nickel alloys, without sacrificing corrosion resistance. MP35N Nickel Cobalt Alloy can be supplied per AMS 5844 (Sol Treated and Cold Worked), and can then be age hardened to increase mechanical properties.

Common industry/applications for MP35N Nickel Cobalt Alloy are: Sour Gas, Aerospace, Oil & Gas, Cryogenic, Medical & Dental equipment.

Product forms include round bar.

Standards

- UNS R30035

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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