

MP35N® NACE Nickel Cobalt Alloy

MP35N® NACE NICKEL COBALT ALLOY DATASHEET

MP35N® NACE Nickel Cobalt Alloy is a Multiphase® cobalt nickel-based superalloy, consisting of 35% Nickel and 35% Cobalt. MP35N NACE 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 NACE Nickel Cobalt Alloy is produced specifically for use in sour gas (H₂S) service. It is produced by aging, to restrict hardness and limit the susceptibility to cracking in these environments.

Common industry/applications for MP35N NACE 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

	Aging Temp °F (°C)	Aging Time	Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) %	Hardness HRC (BHN)
≤2.00	1425 (773)	4 Hrs	190 (1310)	180 (1241)	10%	40%	51 (495)
≤2.00	1350 (732)	4 Hrs	210 (1447)	200 (1378)	10%	40%	51 (495)
≤2.00	1300 (704)	4 Hrs	220 (1516)	210 (1447)	10%	40%	51 (495)
>2.00–3.25	1425 (773)	4 Hrs	170 (1172)	160 (1103)	12%	40%	51 (495)
>2.00–3.25	1350 (732)	4 Hrs	175 (1206)	165 (1137)	12%	40%	51 (495)
>2.00–3.25	1300 (704)	4 Hrs	185 (1275)	175 (1206)	12%	40%	51 (495)

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