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Maraging 350- Technical Specification

1.Product Description:-

Maraging 350 is a cobalt-rich, ultra-high-strength maraging steel that offers excellent toughness, weldability, and dimensional stability during heat treatment. It is designed for extreme applications requiring exceptional strength and reliability, making it ideal for aerospace, defense, and tooling industries.

.2. Chemical Composition:-

Element	Percentage (%)
Iron (Fe)	Balance
Nickel (Ni)	18.0–19.0
Cobalt (Co)	11.5–12.5
Molybdenum (Mo)	4.6–5.2
Titanium (Ti)	1.2–1.6
Aluminum (Al)	0.05–0.15
Manganese (Mn)	0.10 max
Silicon (Si)	0.10 max
Carbon (C)	0.03 max
Sulfur (S)	0.01 max
Phosphorus (P)	0.01 max

3. Mechanical Properties:-

Property	Solution Annealed	Aged Condition
Tensile Strength	~200 ksi (1379 MPa)	~350 ksi (2413 MPa)
Yield Strength (0.2%)	~150 ksi (1034 MPa)	~340 ksi (2344 MPa)
Elongation	~10–15%	~6–10%
Hardness (Rockwell)	~C40	~C55

4. Physical Properties:-

Property	Value
Density	8.0 g/cm³
Melting Range	~1425°C (2597°F)
Thermal Conductivity	~14.5 W/m·K (at 20°C)
Electrical Resistivity	~0.85 µΩ·m (at 20°C)

- ## 5. Heat Treatment **Solution Annealing**: Heat to ~815°C (1500°F), hold, then air cool or quench.
- **Aging**: Age at ~480–510°C (896–950°F) for 3–6 hours to achieve precipitation hardening, maximizing strength and toughness.

- ## 6. Applications:- **Aerospace**: Structural components, landing gear, and fasteners.
- **Tooling**: Extrusion dies, high-strength molds, and die-casting equipment.
- **Defense**: Missile systems, rocket motor casings, and armor plating.
- **Nuclear Industry**: High-strength components for reactor systems.

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- ## 7. Corrosion Resistance:- Moderate resistance to atmospheric corrosion; performs well in controlled environments.
- Susceptible to pitting and crevice corrosion in chloride environments; protective coatings recommended.
- Good resistance to stress-corrosion cracking in non-chloride environments.