

# Maraging 250 Datasheet

Maraging 250 offers high strength, excellent toughness, and good weldability for aerospace, tooling, and structural uses.

<b>Alloy / Grade</b>	Maraging 250
<b>Common Forms</b>	Round Bar, Plate, Forged Billet, Sheet.
<b>Key Feature</b>	Highest fracture toughness in the Maraging family.
<b>Service Focus</b>	Offers superior KIC (Plane Strain Fracture Toughness) values compared to 300 and 350 grades, preventing brittle failure.

## 1. Product Overview

Maraging 250 is an 18% nickel, cobalt-strengthened steel (C-Type) with excellent properties, workability, and heat treatment characteristics. It offers the highest fracture toughness rating of all commercial maraging steel grades, with a nominal yield strength of 250 ksi (1724 MPa).

Grade	Core Description	Typical Service Focus
Maraging 250	Maraging 250 is an 18% nickel, cobalt-strengthened steel (C-Type) with excellent properties, workability, and...	While Maraging 300 and 350 offer higher tensile strength, Maraging 250 is the choice when toughness is the...
Supply Capability	Round Bar, Plate, Forged Billet, Sheet.	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Offers superior KIC (Plane Strain Fracture Toughness) values compared to 300 and 350 grades, preventing...

## 2. Key Features

- While Maraging 300 and 350 offer higher tensile strength, Maraging 250 is the choice when toughness is the priority. It exhibits the best...
- Offers superior KIC (Plane Strain Fracture Toughness) values compared to 300 and 350 grades, preventing brittle failure.
- Uniform, predictable shrinkage during heat treatment allows parts to be machined to very close tolerances before hardening.
- Excellent weldability in the annealed condition without preheating. The heat-affected zone can be restored to full strength by simple aging.

<b>Further information under:</b>	<a href="https://www.nickelcasting.com/nickel-alloys/vascomax-maraging-steel/maraging-250/">https://www.nickelcasting.com/nickel-alloys/vascomax-maraging-steel/maraging-250/</a>
<b>Home page:</b>	<a href="http://www.nickelcasting.com">www.nickelcasting.com</a>
<b>Email:</b>	<a href="mailto:ni@Nickelcasting.com">ni@Nickelcasting.com</a>

## Technical Data

The following values are provided as general reference data for engineering review and procurement planning. Confirm final values against the applicable specification, product form, heat treatment condition and material certificate.

### 3. Chemical Composition (%)

Element	Content (%)
Nickel (Ni)	17.0 - 19.0
Cobalt (Co)	7.0 - 8.5
Molybdenum (Mo)	4.6 - 5.2
Titanium (Ti)	0.3 - 0.5
Aluminum (Al)	0.05 - 0.15
Iron (Fe)	Balance

### 4. Standard Specifications

Product Form	Standards (AMS / ASTM / MIL)
Bar, Forgings, Tubing	AMS 6512
Plate, Sheet, Strip	AMS 6520
Military Spec	MIL-S-46850 Type IV
Chemical Comp	ASTM A538 (Grade A)

### 5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Yield Strength (0.2% Offset)	240 - 265 ksi (1655 - 1827 MPa)
Ultimate Tensile Strength	250 - 275 ksi (1724 - 1896 MPa)
Elongation	10 - 12 %
Reduction of Area	45 - 55 %
Hardness (Rockwell C)	48 - 52 HRC
Fracture Toughness (KIC)	> 80 ksi√in (Excellent)

Note: Values are typical or specification reference values. Purchase requirements should be confirmed against the required standard, drawing and material test report.

## Applications and Ordering Information

Use this section to define inquiry requirements and accelerate technical confirmation for Maraging 250 products.

### 6. Typical Applications

Industry / Area	Typical Components
Industrial Service	Solid propellant rocket motor cases where high strength-to-weight ratio and toughness are vital.
Chemical / Process Equipment	Precision force measurement components that require zero hysteresis and high stability.
Oil, Gas & Marine	Drive shafts and gears in high-performance motorsport and aerospace transmissions.
High-Temperature / Power	Bolts and fasteners subjected to high shock loads and shear forces.
Precision Components	We stock Maraging 250 in round bar and forged billet forms. All material is Vacuum Induction Melted and Vacuum Arc Remelted (VIM-...

### 7. Available Supply Forms

Pipe & Tube	Plate & Sheet	Bar & Rod
Pipe Fittings	Flanges	Wire & Strip
Forgings	Custom Cutting	Project Supply

### 8. Information to Include When Requesting a Quote

- Required grade: Maraging 250, with ASTM / ASME / AMS specification if applicable.
- Product form: pipe, tube, plate, sheet, bar, fittings, flanges, forgings or machined parts.
- Dimensions: outside diameter, wall thickness, length, width, thickness or drawing number.
- Quantity, delivery destination and required delivery schedule.
- Special requirements: cutting, machining, heat treatment, NDT, PMI, test report or material certificate.

Company Information	
Address	Shanghai, China
Email	ni@Nickelcasting.com
Home Page	www.nickelcasting.com
Product Page	<a href="https://www.nickelcasting.com/nickel-alloys/vascomax-maraging-steel/maraging-250/">https://www.nickelcasting.com/nickel-alloys/vascomax-maraging-steel/maraging-250/</a>

### Disclaimer

This datasheet is provided for general reference only. Actual values may vary by product form, heat treatment, manufacturing condition and applicable specification. Please contact us for confirmed specifications, test reports and material certificates before ordering.