

Custom 465® is a premium melted, martensitic, age-hardenable stainless steel alloy. This material was designed with improved tensile strength, fracture toughness, improved fabricability, and excellent resistance to stress corrosion cracking. It has been used in the medical industry, oil and gas drilling, aerospace components, marine equipment, firearms and hand tools.

Nominal Composition %

Mn	Manganese – 0.50%
S	Sulfur – 0.030%
Cr	Chromium – 11.00 – 12.00%
Mo	Molybdenum – 0.50%
Ti	Titanium – 0.80 – 1.40%
Fe	Iron – Balance
C	Carbon – 0.05%
P	Phosphorous – 0.040%
Si	Silicon – 0.50%
Ni	Nickel – 7.50 – 9.50%
Cu	Copper – 1.50 – 2.50%
Nb Ta	Columbium and Tantalum – 0.10 – 0.50%

Percent by weight, maximum unless a range is listed.

Standard Inventory Specifications

- UNS S46500
- AMS 5936
- ASTM F 899

Forms Stocked

- 465 Bar Stock

Thickness Stocked

- 0.125" – 1.250" thick

Applications

- Surgical instruments for orthopedic, spinal, and dental markets
- Drill bits
- Drivers
- Distractors
- Shafts
- Aerospace
- Oil and gas
- Sports equipment



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Industries

- Defense
- Medical
- Oil & Gas
- Space

Physical Properties

Density by Condition	Value - Metric
Annealed/CT	7.81 g/cm ³
H900	7.82 g/cm ³
H950	7.83 g/cm ³
H1000	7.84 g/cm ³
H1050	7.86 g/cm ³
H1100	7.86 g/cm ³

Mechanical Properties – Condition H950

Property	Value
Yield Strength, MPa (ksi)	1648 (239)
Ultimate Tensile Strength MPa (ksi)	1751 (254)
Elongation	14%
Reduction in Area	0.63
Fracture Toughness	98 (89)
Charpy V-Notch Energy, J (ft-lb)	27 (20)