

Custom 455 is a martensitic age-hardenable stainless steel. This alloy represents a significant advancement in the area of precipitation hardening stainless steels. It should be considered where simplicity of heat treatment, ease of fabrication, high strength and corrosion resistance are required.

Specifications

AMS: 5617
UNS: S45500
ASTM: F-899

Chemical Composition, %

	C	P	Si	Ni	Cu	Nb & Ta
MIN	—	—	—	7.50	1.50	0.10
MAX	0.05	0.040	0.50	9.50	2.50	0.50

	Mn	S	Cr	Mo	Ti	Fe
MIN	—	—	11.00	—	0.80	
MAX	0.50	0.030	12.50	0.50	1.40	Bal.

Features

- Resists staining in normal atmospheres
- Shows no corrosion in fresh water
- Soft and formable in the annealed condition
- Exceptionally high yield strength
- Good ductility and toughness

Applications

- Drivers
 - Drill Bits
 - Distractors
 - Shafts
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Mechanical Properties

Properties	Metric	Imperial
Tensile Strength	1413 MPa	204900 psi
Yield Strength	1345 MPa	195100 psi
Modulus of Elasticity	200 GPa	29000 ksi
Poisson's Ration	0.3	0.3
Elongation at Break	14%	14%
Brinell Hardness	411	411
Knoop Hardness, Rockwell C	450	450
Vickers Hardness, Rockwell C	430	430
Hardness, Rockwell C	44	44

Physical Properties

- Density Metric = 7.76 g/cm³
- Density Imperial = 0.280 lb/in³