

410 Stainless Steel

410 STAINLESS STEEL DATASHEET

410 Stainless Steel is a Martensitic Stainless steel with 12% Chromium. 410 offers both outstanding corrosion resistance and exceptional wear resistance. This grade can be heat treated to various levels to achieve a variety of mechanical and hardness values as required by specification and application need. This alloy maintains good corrosion resistance and high strength after heat treat. 410 can be formed due to the excellent ductility in the annealed condition.

Common industry/applications are: Automatic Production Parts, Petrochemical processing, Medical instruments, and Knives and Tooling.

Product forms include round bar, plate & sheet, and forgings.



Standards

- UNS S41000
- AMS 5612
- ASTM A240
- ASTM A276/A479

Physical Properties

- Density: 0.280LB/in³ (7.75g/cm³)
- Melting Point: 2560–2625°F (1404–1440°C)
- Modulus of Elasticity: 28.5x10⁶psi (196 GPa)
- Magnetic Permeability: 22μΩ/in @ 68°F (20°C)

Characteristics

- Good ductility in annealed form.
- Good corrosion resistance.
- Capable of various Quench & Tempers.

Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	N
MIN	0.08	-	-	-	-	11.50	-	-
MAX	0.15	1.00	0.030	0.040	1.00	13.50	0.750	-

Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) % **	Hardness * HRB (BHN)
75 (510)	42 (290)	20%	45%	97 (223)

As a Martensitic Stainless, 410 responds to Heat Treat and can be hardened to various conditions and hardness strengths. Most commonly 410QDT (Class 1 and Class 2).

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