

Material Datasheet

Alloy 410S Stainless Steel

UNS: S41008
EN DIN: 1.4000

Description: 410S Stainless Steel is a non-hardening modification of Type 410. Small alloying additions minimize austenite formation at high temperatures, thereby restricting the alloy's ability to harden. The result is a ductile condition when the material is rapidly cooled from above the critical temperature. This non-hardening characteristic also hinders formation of cracks when the steel is welded. The alloy is completely ferritic in the annealed condition.

Applications include: Distillation trays, Heat exchangers, Annealing boxes

Industries supplied include: Oil & Gas, Chemical Processing, General Manufacturing

Nominal Composition

	C	Mn	P	S	Si	Cr	Ni	Ti	Fe
min	-	-	-	-	-	11.50	-	-	BAL
max	.080	1.0	0.040	0.030	1.00	13.50	0.60	0.20	-

Physical Properties

	At 70°F	At 20°C
Density	0.280 lb/in ³	7.73 g/cm ³
Modulus of Elasticity (E)	29.0 x 10 ³ ksi	200 GPa
Coefficient of Expansion	6.0 µin/in-°F (32-212°F)	10.8 µm/m-°C (0-100°C)
Electrical Resistivity	23.7 µohm-in	60 µohm-cm
Thermal Conductivity	187 Btu-in/ft ² -hr- °F (212°F)	26.9 W/m-K (100°C)

Applicable Specifications

Strip & Sheet ASTM A240

Typical Mechanical Properties Typical Room Temperature Mechanical Properties

Condition	Tensile Strength (UTS)	0.2% Offset Yield	Elongation in 2" (50.8 mm)	Hardness Rockwell
Annealed	65 ksi (448 MPa)	40 ksi (276 MPa)	30%	75 HRBW

Typical mechanical properties are based on ASTM A240



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