



Elgiloy Specialty Metals Hampshire Mill

Alloy 410S Stainless Steel

UNS: S43900
EN-DIN: 1.4510

410S Stainless Steel is a non-hardening modification of Type 410. A small aluminum addition minimizes austenite formation at high temperatures, thereby restricting the alloy's ability to harden. The result is a soft, ductile condition when the material is rapidly cooled from above the critical temperature. This non-hardening characteristic also retards formation of hardening cracks when the steel is welded. The alloy is completely ferritic in the annealed condition.

Nominal Composition

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

Physical Properties

	At 70°F	At 20°C
Density	0.280 lb./in ³	7.73 kg/m ³
Modulus of Elasticity (E)	29.0 x 10 ³ ksi	200 x 10 ³ MPa
Electrical Resistivity	23.7 μ ohm.in	60.0 μ ohm.cm
Thermal Conductivity	15.6 Btu-in./ft.2hr.-°F (100°C)	26.9 W/m-K (100°C)
Coefficient of Expansion	9.6 x 10 ⁻⁶ microinches/in.-°F (32-212°F)	17.3 μm/m-°C (0-100°C)

Applicable Specifications

ASTM A240

Typical Mechanical Properties – Typical Room Temperature Mechanical Properties

Condition	Tensile Strength (UTS)	0.2% YS	Elongation% in 2" (50.8 mm)	Hardness Rockwell
Annealed	65 ksi (448 MPa)	40 ksi (276 MPa)	25	75 HRBW

Typical mechanical properties are based, AK source on ASTM A240

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