



Elgiloy Specialty Metals

Hampshire Mill

Alloy 301 Stainless Steel

UNS: S30100

EN-DIN: 1.4310

Austenitic chromium-nickel stainless steel. Its high strength and corrosion resistance makes it a versatile alloy for a wide variety of applications. Typical applications include appliances, automotive applications, utensils, and high strength structural parts.

Nominal Composition

	C	Mn	P	S	Si	Cr	Ni	N	Fe	
min	-	-	-	-	-	16.0	6.0	-	-	
max	.15	2.0	0.045	0.030	1.00	18.0	8.0	0.10	BAL	

Physical Properties

	At 70°F	At 20°C
Density	0.285 lb./in ³	7.88 g/cm ³
Modulus of Elasticity (E)	28.0 x 10 ³ ksi	193 x 10 ³ MPa
Coefficient of Expansion	9.4 x 10 ⁻⁶ microinches/in.-°F (70-600°F)	16.9 μm/m-°C (20-300°C)
Electrical Resistivity	27.4 μ ohm.in	69.5 μ ohm.cm
Thermal Conductivity	9.4 Btu-in./ft. ² hr.-°F	16.2 W/m-K

Applicable Specifications

ASTM A240, ASTM A666

Typical Mechanical Properties – Typical Room Temperature Mechanical Properties

Condition	Tensile Strength (UTS)*	0.2% YS*	Elongation% in 2" (50.8 mm)	Hardness Rockwell
Annealed	120 ksi (827 MPa)	45 ksi (310 MPa)	60	86 HRBW
¼ hard	125 ksi (862 MPa)	75 ksi (517 MPa)	25	25 HRCW
½ Hard	150 ksi (1034 MPa)	110 ksi (758 MPa)	18	32 HRCW
¾ Hard	175 ksi (1207 MPa)	135 ksi (931 MPa)	12	37 HRCW
Full Hard	185 ksi (1276 MPa)	140 ksi (965 MPa)	9	41 HRCW

Typical mechanical properties are based, AK source on ASTM A240/A666

* Minimum- Standard practice is to produce to either minimum tensile strength, minimum yield or minimum hardness, but not to combinations of these properties. More Tempered Properties available upon request.

For further information email:
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