

## Alloy 347 Stainless Steel

UNS N34700  
W. Nr 1.4550

### Applicable Specifications

Wire & Bar | AMS 5674, 5646, ASTM A313, ASTM A580, NACE MR0175/ISO 15156

**Description:** Type 347 is a stabilized austenitic stainless steel, similar to type 304, but alloyed with Niobium (Columbium) for use in applications involving continuous or intermittent service at 800-1500°F (427-816°C). 347 stainless has excellent resistance to oxidation, even surpassing that of 321 in strong oxidizing conditions. The alloy maintains resistance to intergranular corrosion, while also possessing good creep strength compared to other 300 series stainless steels. The alloy is strengthened only through cold work and can be fabricated, machined, and welded via most conventional processes.

**Applications include:** Annealing covers, High-temperature tempering equipment, Diesel and heavy-duty automotive exhaust, Firewalls, Stack liners, Boiler casings, Welded pressure vessels, Aircraft components, Bellows, Oil refinery equipment, Fasteners, Springs

**Industries supplied include:** Aerospace, Oil & Gas, Chemical Processing, Food Processing, Waste Treatment

### Nominal Composition

	C	Mn	P	S	Si	Ni	Cr	Nb (Cb)	N	Fe
min	-	-	-	-	-	9.00	17.00	10*C	-	Bal
max	0.08	2.00	0.045	0.030	1.00	12.00	19.00	1.00	0.10	-

### Physical Properties

	At 70°F	At 20°C
Density	0.288 lb/in <sup>3</sup>	7.96 g/cm <sup>3</sup>
Modulus of Elasticity (E)	28.0 x 10 <sup>3</sup> ksi	193 GPa
Modulus of Rigidity (G)	11.2 x 10 <sup>3</sup> ksi	78 GPa
Coefficient of Expansion	11.4 µin/in-°F (32-1500°F)	20.5 µm/m-°C (0-871°C)
Electrical Resistivity	28.4 µohm-in	72 µohm-cm
Thermal Conductivity	113 Btu-in/ft <sup>2</sup> -hr-°F (212°F)	16.3 W/m-°C (100°C)

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1750-2050°F (954-1121°C)	80-110 ksi (552-758 MPa)	Up to 1500°F (816°C)
Spring	Stress Relieve 600-900°F (316-482°C)	200 ksi min (1379 MPa)	Up to 500°F (288°C)

### Elgiloy Specialty Metals – Wire Products

356 North Cross Street  
Sycamore, IL 60178 USA  
Phone: 1-847-695-1900

[www.elgiloy.com](http://www.elgiloy.com)

**LIMITATION OF LIABILITY AND DISCLAIMER OF WARRANTY:**

The content in these data sheets is provided primarily by third-party melting mills and is provided for reference only. It is not intended for engineering or design.

Applications may be discussed, however, Elgiloy Specialty Metals does not recommend or endorse any material for any particular end use or application.

The data included in this data sheet are typical values and may vary.

Elgiloy Specialty Metals makes no representations or warranties, express or implied, as to the accuracy, completeness, condition, suitability, performance, fitness for a particular purpose, or merchantability of any information contained in any data sheet.

In no event will Elgiloy Specialty Metals be liable for any damages whatsoever arising from the use of the information included in the data sheets.