



# Elgiloy Specialty Metals – Strip Products

## Alloy 321 Stainless Steel

UNS N32100  
W. Nr 1.4541

### Applicable Specifications

Strip and Foil | AMS 5510, ASTM A240

**Description:** Type 321 is a stabilized austenitic stainless steel, similar to type 304, but alloyed with titanium for use in applications involving continuous or intermittent service at 800-1500°F (427-816°C). 321 stainless has excellent resistance to oxidation and 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, and Springs

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

### Nominal Composition

	C	Mn	P	S	Si	Ni	Cr	Ti	N	Fe
min	-	-	-	-	-	9.00	17.00	5*(C+N)	-	Bal
max	0.08	2.00	0.045	0.030	0.75	12.00	19.00	0.70	0.10	-

### Physical Properties

	At 70°F	At 20°C
Density	0.290 lb/in <sup>3</sup>	8.09 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	11.2 µin/in-°F (32-1500°F)	20.2 µm/m-°C (0-871°C)
Electrical Resistivity	28.4 µohm-in	72 µohm-cm
Thermal Conductivity	111 Btu-in/ft <sup>2</sup> -hr-°F (212°F)	16.0 W/m-°C (100°C)

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1750-2050°F (954-1121°C)	70-100 ksi	Up to 1500°F (816°C)

#### 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, a Division of Combined Metals of Chicago L.L.C., 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, a Division of Combined Metals of Chicago L.L.C., 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, a Division of Combined Metals of Chicago L.L.C., be liable for any damages whatsoever arising from the use of the information included in the data sheets.

For further information:  
Email: [stripinquiries@elgiloy.com](mailto:stripinquiries@elgiloy.com)  
Phone: 1-888-843-2350

Elgiloy Specialty Metals - Strip Products  
1565 Fleetwood Dr.  
Elgin, IL 60123 USA

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

Rev Date: 8/25/2020