

# 321 Stainless Steel

## 321 STAINLESS STEEL DATASHEET

321 is titanium stabilized chromium-nickel austenitic stainless. With similar corrosion resistance properties to that of 304/304L. 321 is used typically in environments with 800-1500°F temperature range, this is because the alloy is stabilized through the addition of titanium to protect against Chromium carbide forming. 321 has superior intergranular corrosion resistance after being exposed to these temperatures.

Common industry/applications are: Aerospace, Chemical Processing, Food Processing, and Oil and Gas.

Product forms include round bar, plate & sheet, and forgings.



### Standards

- UNS S32100
- UNS S32109
- ASTM A240
- ASTM A276/A479
- AMS 5645
- AMS 5510

### Physical Properties

- Density: 0.286LB/in<sup>3</sup> (7.92g/cm<sup>3</sup>)
- Melting Point: 2550–2590°F (1398–1421°C)
- Modulus of Elasticity: 28.0x10<sup>6</sup>psi (193 GPa)
- Magnetic Permeability: 1.02 Max @ 200 H (Annealed)

### Characteristics

- Suitable for use at high temperatures.
- Improved corrosion resistance.
- Weldable.

### Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	N	Ti
321	0.08 Max	2.00 Max	0.030 Max	0.045 Max	0.750 Max	17.00 - 19.00	9.00 - 12.00	0.10 Max	5x (C+N)-0.70
321H	0.04 - 0.10	2.00 Max	0.030 Max	0.045 Max	0.750 Max	17.00 - 19.00	9.00 - 12.00	0.10 Max	5x (C+N)-0.70

### Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) % **	Hardness * HRB (BHN)
75 (515)	30 (205)	60%	70%	95 (217)

Mechanical properties can be altered (increased/decreased) by the addition of other chemical elements like Selenium (Se) to form 303Se. However, these grades are more specialized and may not be available in all forms and sizes.

WWW.SPECIALTYSTEELSUPPLY.COM



SPECIALTY STEEL SUPPLY  
19201 CIRCLE LAKE DR  
PINEHURST, TX 77362  
Call for a quote (281) 821-7111

