

# STAINLESS STEEL

## 321 - 1.4541



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Stainless steel 321, with the designation 1.4541, is a type of austenitic stainless steel that has a high resistance to carbide precipitation and oxidation when exposed to high temperatures. It is stabilised with titanium and has a titanium content of at least five times the carbon content, which prevents intergranular corrosion.

#### KEY FEATURES

- High temperature resistance
- Good corrosion resistance
- Weldability
- Creep and stress rupture properties
- Good formability and ductility

#### CHEMICAL PROPERTIES

Chromium (Cr)	Nickel (Ni)	Manganese (Mn)	Silicone (Si)	Titanium (Ti)	Nitrogen (N)	Carbon (C)	Phosphorus (P)	Sulphur (S)
17-19%	9-12%	2%	1%	0.7%	0.1%	0.08%	0.045%	0.03%

#### MECHANICAL PROPERTIES

Tensile strength (N/mm <sup>2</sup> )	515
Yield strength (N/mm <sup>2</sup> )	205
Elongation (% in 4D)	40
Hardness - Rockwell (HRB) max	95
Hardness - Brinell (HB) max	217

#### PHYSICAL PROPERTIES

Density (kg/m <sup>3</sup> )	7900	
Modulus of elasticity (Gpa)	193	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	16.6
	0-350°C (µm/m/°C)	17.2
	0-538°C (µm/m/°C)	18.6
Thermal conductivity	at 100°C (W/m.K)	16.1
	at 500°C (W/m.K)	22.2
Specific Heat 0-100°C (J/kg.K)	500	
Electrical resistivity (nΩ.m)	720	
Melting point (°C)	1450	

#### MARKET SECTORS



Food & Beverage Industry

Equipment, industrial kitchens



Chemical Processing

Reactors, vessels, piping, heat exchangers



Oil & Gas Industry

Components, pipelines, tubing



Power Generation

Boiler tubes, heat exchangers



Automotive Industry

Exhaust systems, catalytic converters



Aerospace Industry

Aircraft exhaust stacks, components