

# 321 Stainless

## Technical Datasheet



### Austenitic Stainless Steel with added Titanium

Service. Quality. Value.

#### Typical Applications

- Jet aircraft components
- Oil refinery equipment
- Stack liners
- Industrial boilers
- Pressure vessels
- Heat exchangers

#### Product Description

Type 321 stainless is an austenitic steel alloy with added Titanium which acts as a stabiliser. Titanium content is typically five times that of the carbon content and this addition reduces carbide precipitation during welding and improves elevated temperature properties. Type 321 offers excellent resistance to oxidation and chemical corrosion. The alloy also possesses good creep strength. It can be readily formed or drawn though it is more difficult to form than other austenitic grades. Type 321 is used in a wide range of applications including oil & gas, petrochemical, aerospace and general industry.

#### Key features

- A variation of Type 304 with the addition of titanium as a stabiliser.
- Resistant to intergranular corrosion.
- Can be easily welded and formed.

#### Formability

More difficult to form than other austenitic grades.

#### Weldability

Weldable by common fusion and resistance techniques.

#### Availability

Round Bar, plate, sheet, wire tube.

#### Corrosion resistance

Excellent oxidation and chemical resistance.

#### Chemical Composition (weight %)

	C	Mn	Si	P	S	Cr	Ni	N	Ti5(C+N)
min						17.00	9.00		
max	0.08	2.00	0.75	0.045	0.030	19.00	12.00	0.10	0.70

#### Mechanical Properties

Tensile strength	515 min	MPa
Proof Stress	205	MPa
Elongation A5	40	%

#### Physical Properties

Density	8.09	g/m <sup>3</sup>
Melting Point	1400	°C
Modulus of Elasticity	193	GPa
Electrical Resistivity	0.074	x10 <sup>-6</sup> Ω.m
Thermal Conductivity at 100°C	16.1	W/m.K

#### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

##### UK Service Centres:

Smiths Belfast **02895 908 897**  
 Smiths Biggleswade **01767 604 704**  
 Smiths Birmingham **0121 728 4940**  
 Smiths Bristol **0117 971 2800**  
 Smiths Chelmsford **01245 466 664**  
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 Smiths Verwood **01202 824 347**  
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##### Quality & Testing:



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