

321 Stainless Steel

Smiths Advanced Metals

Rev: SAM/datasheets/stainless-steel-sheet/321-stainless/feb-2022

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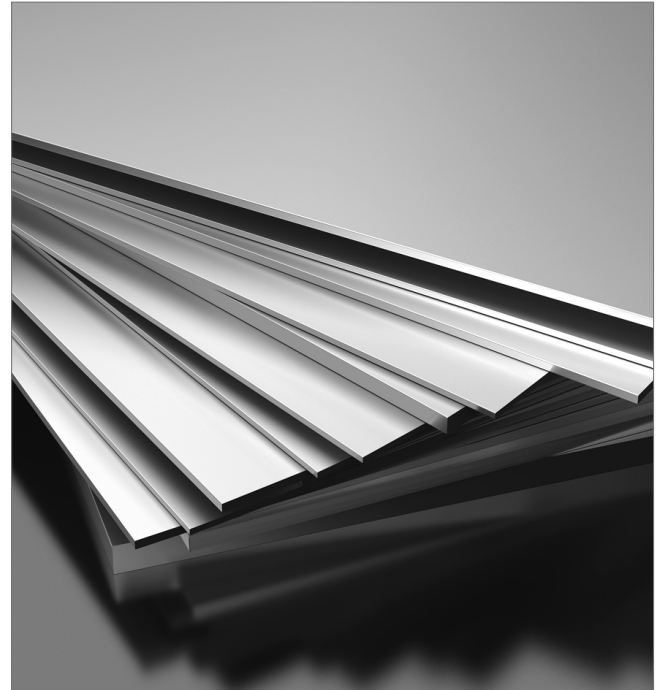
Austenitic Stainless Steel Sheet

Stabilised with Titanium.

321 stainless steel sheets offer as the primary advantage of an excellent resistance to intergranular corrosion to temperatures in the chromium carbide precipitation range from 427 to 816°C (800 to 1500°F).

The titanium stabilised product benefits from reduced carbide precipitation during welding and improves the alloy's suitability for use in elevated temperatures. 321 stainless is easily welded and formed and is resistant in oxidating environments. The alloy maintains strength and toughness in sub-zero temperatures. Typical applications include heat exchangers, petrochemical processing equipment, pressure vessels, boilers and aerospace engine components. The alloy offers improved creep and stress rupture properties compared to 304/304L in the annealed condition.

Smiths Advanced Metals stocks 321 stainless steel sheets in the solution heat-treated (annealed) condition. Sheet stock from grade 321 are available in various thicknesses.



Grades / Specifications

- 1.4541
- UNS S32100
- AMS5510
- ASME SA240
- ASNA3106
- ASTM A240
- BS S526, BS S500
- NACE MR0103, NACE MR0175
- Z6CNT18.10

Grades / Specifications

- Good mechanical properties
- Excellent toughness at sub-zero temperatures
- Excellent oxidation resistance
- Easily welded and formed
- Improved creep / rupture properties

* Chemical Composition (weight %)

	C	Mn	Si	P	S	Cr	Ni	N	Ti	Mo	Cu
min.			0.25			17.00	9.00		5x(C+N)		
Max.	0.08	2.00	1.00	0.040	0.030	19.00	12.00	0.10	0.70	0.75	0.75

* As per AMS 5510

* Mechanical Properties

* Mechanical Properties				Physical Properties			
Size	Tensile Strength	0.2% Yield	Elongation	Density			8.09 kg/m ³
over 0.05-0.08mm (incl.)	483 - 758 MPa	172 MPa min	20% min	Melting Point			1400 °C
over 0.08-0.10mm (incl.)	483 - 724 MPa	172 MPa min	30% min	Modulus of Elasticity			193 GPa
over 0.10mm	483 - 689 MPa	172 MPa min	40% min	Electrical Resistivity			0.074 x10 ⁻⁶ Ω.m
				Thermal Conductivity			16.1 W/m.K

* Properties as per AMS 5510.

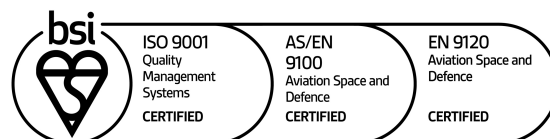
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