

AISI 321H

Grade: 321H, 1.4541

Type: Austenitic stainless steel delivered in the solution annealed condition.

Nominal Composition	
Element	Weight %
Carbon	0.10 max
Silicon	1.0 max
Manganese	2.0 max
Phosphorus	0.045 max
Sulphur	0.030 max
Molybdenum	2.0 – 3.0 max
Chromium	17.0-19.0 max
Nickel	9.0-12.0 max
Ti (5XC)	0.70 max

Grade Selection

321H is a titanium stabilised austenitic stainless steel. It is a high carbon version of standard 321 grade.

The addition of titanium to 321 stainless helps improve the welding properties and the elevated temperature properties of the steel. This stainless steel offers excellent oxidation resistance and corrosion resistance. It exhibits higher creep and stress rupture properties than 304 austenitic stainless grade. 321 stainless possesses excellent resistance to intergranular corrosion when worked or welded in temperatures with the carbide precipitation range of 427-818°C (800-1500°C). The high carbon content gives improved high temperature strength.

Resistance to organic acids and some inorganic acids is excellent, but long term exposure to temperature between 900-1500°F may reduce its overall general corrosion resistance however it remains better than other unstabilized grades.

Mechanical Properties Condition

Solution annealed at around 1000-1100°C and water quenched or air.

Property	Values
0.2 % Yield Strength	205 N/mm ² min
Elongation %	40% min
Hardness	217 HBW max