



Grade	Code	AISI	Austenitic Stainless Steel
1.4571	X6CrNiMoTi17-12-2	316Ti	

Steel Properties

1.4571 is a titanium-stabilized austenitic Cr-Ni-Mo stainless steel. **AISI 316Ti** provides good corrosion resistance in atmospheric conditions and in many natural and industrial waters. Its molybdenum content improves resistance to pitting and crevice corrosion in chloride-bearing environments compared with standard Cr-Ni stainless steels. Titanium stabilization reduces the risk of chromium carbide precipitation at grain boundaries during welding or elevated-temperature exposure, helping maintain resistance to intergranular corrosion. This makes **316Ti** particularly suitable for welded and elevated-temperature applications.

Chemical Composition (1.4571)

C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Ti %	Fe %
≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.03	16.50–18.50	10.50–13.50	2.00–2.50	≥ 5×C, ≤ 0.70	Bal.

**Values are based on EN 10088-3.*

Mechanical Properties (Solution Annealed, approx. 20°C)

Product Form	Rp0.2 (MPa)	Rm (MPa)	A (%)	Hardness	Density
Bar	≥210	515–700	≥40	≤215 HB	8.00
Plate	≥220	520–670	≥40	—	8.00
Cold-Rolled Sheet	≥240	540–690	≥40	≤210 HB	8.00
Tube / Pipe	≥220	510–710	≥35	≈155 HV	8.00

Applications

Industry	Common Products
Chemical & Process Industry	Heat exchangers, process piping, pressure vessels / reactors
Petrochemical & Oil & Gas	Process piping and fittings, valve/pump components, heat exchangers
Fertilizer Industry	Process piping systems, pressure vessels, valve and pump parts
Pulp & Paper	Heat exchangers and condensers, process piping, chemical process tanks
Power Generation	Condensers, heat exchangers, high-temperature piping/duct components
Chimney & Flue Gas Systems	Industrial chimneys, flue gas ducts, high-temperature connections and expansion components
Pharmaceutical	Process piping systems, process tanks, valve and pump components
Food & Beverage	Process tanks, hygienic piping and fittings, heat exchangers



Description

AISI 316Ti is notable for retaining mechanical strength at elevated temperatures better than standard 316 grades. Titanium stabilization helps reduce susceptibility to intergranular corrosion caused by chromium carbide precipitation after prolonged exposure within the 450-850°C sensitization range. This makes 316Ti a useful option for welded fabrications and service conditions involving elevated temperatures. However, 316Ti is not inherently superior to 316L in every application; grade selection should be based on operating temperature, corrosive environment and service conditions.

Specification

AISI 316Ti, 1.4571, X6CrNiMoTi17-12-2, UNS S31635

Standards

Product Form	ASTM Specification
Round Bar	ASTM A276 / ASTM A479
Plate	ASTM A240
Sheet	ASTM A240
Pipe	ASTM A312 – TP316Ti
Seamless Tube	ASTM A213 – TP316Ti
General Service Tube	ASTM A269 – TP316Ti

Alternative Grades

Grade	Why Consider It?
AISI 316/316L – 1.4401 / 1.4404	Offers a similar Cr-Ni-Mo alloy concept and corrosion behavior. If Ti stabilization is not required for sustained elevated-temperature service, 316L should generally be the first grade considered.
AISI 317	Its higher alloy content than the 316 family makes it a logical step-up option when greater corrosion resistance is required.
904L – 1.4539 / UNS N08904	With substantially higher Ni and Mo contents, this austenitic grade can be considered above 316Ti for more severe corrosive process conditions.