

AISI 316 / UNS S31600 / DIN 1.4401

Marine Grade Stainless Steel

Alloy 316 Data Sheet

Introduction

Alloy 316 is chrome-nickel austenitic alloy. It also contains molybdenum which increases general corrosion resistance, improves resistance to pitting from chloride ion solutions, and provides increased strength at high temperatures. Alloy 316 also provide excellent fabricability and formability. It is also called Marine Grade Stainless Steel.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.000	0.080
Manganese	0.000	2.000
Silicon	0.000	0.750
Phosphorus	0.000	0.045
Sulphur	0.000	0.030
Chromium	16.000	18.000
Nickel	10.000	14.000
Molybdenum	2.000	3.000
Nitrogen	0.000	0.100
Iron	Remainder	

Mechanical Properties (typical)

Parameter	Value
Yield 0.2 % (ksi/Mpa), Min	205
Tensile (ksi/Mpa), Min	515
Elongation (% in 50mm), Min	40
Reduction in Area, %	69
Hardness (HB), Max	217

Physical Properties

Parameter	Value
Density (Kg/m ³)	8000
Elastic Modulus (Gpa)	200
Co-eff of Expansion ($\mu\text{m}/\text{m}/^\circ\text{C}$)	15.9
Thermal Condc. (W/m.K)	16.3
Electric Resistivity (n Ω .m)	740

Corrosion Data

The Cr-Ni-Mo standard stainless steels have a adaptable corrosion resistance and are suitable for a wide range of applications. Generally, the Type 316H grade is considered to perform equally well for a given environment. A remarkable exception is in environments sufficiently corrosive to cause intergranular corrosion of welds and heat-affected zones on exposed alloys.

Equivalent Grade Designation

AISI 316
UNS S31600
BS 316S31
DIN EN 1.4401
0Cr17Ni12Mo2
Z7 CND 17-11-02
SS 2347
EN 58J

Alloy 316 Data Sheet

Available Product Forms

Round, Square, Hexagon & Flat Bars
Seamless / Welded Pipes
Seamless / Welded Tubes
Hot & Cold Rolled Plates & Sheets
Forged Bars
Buttweld Pipe Fittings
Forged Fittings
Ferrule Compression Fittings
Forged Flanges
Valves
Gauges

Common Manufacturing Specifications

AMS 5524, AMS 5573, AMS 5648, AMS 5690, AMS 5696, ASTM A167, ASTM A182, ASTM A193, ASTM A194, ASTM A213, ASTM A240, ASTM A249, ASTM A269, ASTM A270, ASTM A271, ASTM A276, ASTM A312, ASTM A313, ASTM A314, ASTM A320, ASTM A336, ASTM A351, ASTM A358, ASTM A368, ASTM A376, ASTM A403, ASTM A409, ASTM A430, ASTM A473, ASTM A478, ASTM A479, ASTM A492, ASTM A493, ASTM A511, ASTM A554, ASTM A580, ASTM A632, ASTM A666, ASTM A688, ASTM A743, ASTM A744, ASTM A771, ASTM A813, ASTM A814, ASTM A826, ASTM F138.

Alternate to Alloy

- 316Ti** Better resistance to temperatures of around 600-900°C.
- 316N** Higher strength than standard 316.
- 317L** Higher resistance to chlorides with similar resistance to stress corrosion cracking.
- 904L** higher resistance to chlorides at elevated temperatures, with good formability.
- 2205** higher resistance to chlorides and higher strength than 316.

Applications & Industries

Food and Beverage Processing
Chemical & Fertilizer Industries
Medical and Pharmaceutical industry
Petroleum - Oil & Gas Platforms
Power Generation
Water Treatment
Heat Exchangers

Excellence Inherent

With 3 decade long experience inherited, we aim at providing better solutions for Industrial Piping Sector. Skilled Team, passion drives our *will* to be better with resolute for continous customer & vendor concurrence. We also perceive our duty towards planet for its unconditional support & try to minimise any harm caused due to our activity. For Instance, *We Stay Paperless*

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