

# Stainless Steel 316 / 1.4401 / X5CrNiMo17122

## Alternative Designations

UNS S31600, SS316, 316SS, AISI 316

## Key Features

Corrosion resistance • High strength and durability  
• Biocompatibility • Weldability

## Description

Stainless steel 316 is a highly corrosion-resistant alloy renowned for its exceptional durability and versatility. With its excellent mechanical properties, this material finds widespread use in diverse industries, from manufacturing and construction to healthcare, where its biocompatibility makes it a preferred choice. Stainless steel 316's ability to maintain its integrity in harsh environments, coupled with its ease of fabrication and welding, makes it an invaluable material for a wide range of applications, such as food and pharmaceutical processing equipment, marine exterior trim and industrial equipment.

## Mechanical Properties

Yield strength	200 MPa
Tensile strength	500 – 700 MPa
Elongation at break	40%
Hardness (HB 30)	215
Module of elasticity	200GPa

## Physical Properties

Density	8 g/cm <sup>3</sup>
Electrical conductivity	0.75 m/Ω · mm <sup>2</sup>
Thermal conductivity	15 W/m · K
Specific heat capacity	500 J/kg · K

## Chemical Composition

Al	-	N	0.11%
Bi	-	Nb	-
C	0.07%	Ni	10 – 13%
Cd	-	O	-
Co	-	P	0.045%
Cr	16.5 – 18.5%	Pb	-
Cu	-	S	0.015%
Fe	-	Si	1%
H	-	Sn	-
Mg	-	Ti	-
Mn	2%	V	-
Mo	2 – 2.5%	Zn	-

## Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit [Materialdatacenter.com](https://Materialdatacenter.com) for further information on this material.