Data Sheet

Stainless Steel 316L / 1.4404 / X2CrNiMo17-12-2

Alternative Designations

X2CrNiMo17-12-2 (ISO) | 316L (AISI/SAE) | S31603 (UNS) | Z2CND17.12 (AFNOR) | 316S12 (BS) | 2343/2348/2553 (SIS) | X2CrNiMo1712 (UNI) | SUS316 (JIS)

Key Features

Good heat resistance • Corrosion resistance • High weldability

Description

It is an austenitic chromium-nickel alloy that contains molybdenum and nitrogen. This combination of elements makes it durable and provides it with a number of other desirable properties. The addition of molybdenum results in improved corrosion resistance with good stability against chloric and non-oxidizing acid. It has good heat resistance which reduces in continuous use at 425 – 861°C in water. It can be readily formed into different products. It has good machinability and is used in food processing equipment, boat fittings, bolts, nuts, and springs.

Mechanical Properties

Yield strength	260 – 270 MPa
Tensile strength	520 – 680 MPa
Elongation at break	≥ 45%
Hardness	215
Module of elasticity	200 GPa

Physical Properties

Density	8 g/cm³
Electrical conductivity	1.33 m/Ω · mm²
Coefficient of thermal expansion	16.5 K-1 · 10-6
Thermal conductivity	15 W/m · K
Specific heat capacity	500 J/kg · K

Chemical Composition

Al	-	N	0.1%
Bi	-	Nb	-
C	0.03%	Ni	10 – 13%
Cd	-	O	-
Co	-	P	0.045%
Cr	16.5 – 18.5%	Pb	-
Cu	-	S	0.03%
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 for further information on this material.