

AISI 348 / UNS S34800 / DIN 1.4546

Tantalum/Niobium Stabilized Austenitic Stainless Steel

Alloy 348 Data Sheet

Introduction

Alloy 348 is tantalum & columbium stabilized Austenitic alloy similar to 347/347H with addition of cobalt. AISI 348 exhibits similar properties to AISI 347/321 in terms of corrosion, stress & creep corrosion. Due to restriction of niobium & tantalum, 348 serves a vital role in nuclear industry.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.400	1.000
Manganese	0.000	2.000
Phosphorus	0.000	0.045
Sulphur	0.000	0.030
Silicon	0.000	0.750
Chromium	17.000	19.000
Nickel	9.000	13.000
Niobium	8 x C	1.000
Tantalum	0.000	0.100
Cobalt	0.000	0.200
Iron	Remainder	

Mechanical Properties (Annealed)

Parameter	Value
Yield 0.2 % (Mpa/Nmm ²), Min	205
Tensile (Mpa/Nmm ²), Min	515
Elongation (% in 50MM), Min	30
Reduction Area(%), Min	40
Hardness (BHN), Max	201

Physical Properties

Parameter	Value
Density (Kg/m ³)	7096
Elastic Modulus (Gpa)	193
*Co-eff of Expansion ($\mu\text{m}/\text{m}/^\circ\text{C}$)	18.9
*Thermal Condc. (W/m.K)	21.4
Electric Resistivity (n Ω .m) 20°C	720

*Note : @500°C

Corrosion Data

AISI 348 exhibit equal stress corrosion cracking & pitting/crevice corrosion as AISI 347 & 321 due to their similar Nickel & Chromium content respectively. AISI 348 works well in stress relieved condition. AISI 348 is not recommended for marine applications

Equivalent Grade Designation

AISI 348
UNS S34800
DIN 1.4546
SAE 30348

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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
Guages

Common Manufacturing Specifications

AMS 5512, 5556, 5558, 5571, 5575, 5646, 5654, 5674, ASTM/ASME A167, A182, A213, A240, A249, A269, A271, A276, A312, A314, A336, A358, A376, A403, A409, A430, A473, A479, A511, A554, A580, A632, A774, A778, A813, A814, MIL A-23196, MIL S-23195, MIL S-23196, MIL T-6737QQ,

Alternate to Alloy

AISI 316 could replace 348 for marine applications & environment with higher chloride, low ph.

Applications & Industries

Nuclear Applications
Aerospace Equipments
Heat Exchangers & Boilers
Chemical, Pharmaceutical, brewery, dairy & petrochemical Equipments
Fasteners - Bolts, Screws, Nuts & Springs
High Temperature Service Equipments

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FERROBEND | Industrial Piping Products

#1016 Prasad Chambers Opera House Mumbai 400004 INDIA

Tel : 91 - 22 - 6666 5432 Fax : 91 - 22 - 6636 3375

www.ferrobend.com