

AISI 446 / UNS S44600 / DIN 1.4762

Iron Chrome Ferritic Stainless Steel

Alloy 446 Data Sheet

Introduction

AISI 446 is Non heat-treatable Iron-Chrome Ferritic Stainless Steel with good Oxidation & Corrosion resistance at elevated temperatures. Usually applied in high temperature applications.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.000	0.200
Manganese	0.000	1.500
Phosphorus	0.000	0.400
Sulphur	0.000	0.300
Silicon	0.000	1.000
Chromium	23.000	27.000
Nitrogen	0.000	0.750
Iron	Remainder	

Mechanical Properties (Typical)

Parameter	Value
Yield 0.2 % (Mpa/Nmm ²), Min	275
Tensile (Mpa/Nmm ²), Min	450
Elongation (% in 50MM), Min	20
Reduction Area(%), Min	45
Hardness (BHN), Max	219

Physical Properties

Parameter	Value
Density (Kg/m ³)	7800
Elastic Modulus (Gpa)	200
*Co-eff of Expansion ($\mu\text{m}/\text{m}/^\circ\text{C}$)	10.4
*Thermal Condc. (W/m.K)	21.6
Electric Resistivity (n Ω .m) 25°C	402

*Note : @500°C

Corrosion Data

AISI 446 offers good corrosion & oxidation resistance at elevated temperatures. Although a ferritic Stainless Steel, AISI 446 offers considerable corrosion resistance as compared to other 400 series Alloys.

Equivalent Grade Designation

AISI 446
SS 2322
SS 446
UNS S44600
EN-DIN 1.4762
X10CrAlSi25
AFNOR C10C24
GOST Kh27
SAE 446

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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
Forged Flanges
Butt-Weld Pipe Fittings
Socket-Weld/Forged Pipe Fittings
Machined Components

Common Manufacturing Specifications

ASTM A176, ASTM A268, ASTM A276, ASTM A314, ASTM A473, ASTM A511, ASTM A815, QQ S763, QQ S766, ASME SA268, ASTM A580, FED QQ-S-763, FED QQ-S-766, MIL SPEC MIL-S-862, SAE J405 (51446), ASME SA176, ASME SA268, ASME SA276, ASME SA314, ASME SA473, ASME SA511, ASME SA815

Alternate to Alloy

XM-27, AISI 304 are good alternative to AISI 446 with respect to corrosion resistance, machinability.

Applications & Industries

Industrial Mufflers
Furnace Parts
Oil Burner Equipments
Boiler Baffles
Annealing Boxes
Glass moulds, kiln Linnings
X-Rays Tube bases

Excellence Inherent

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