

## 254 SMO / UNS S31254 / DIN 1.4547

High end Austenitic Stainless Steel

Alloy 254 Data Sheet

### Introduction

Stainless steel grade 254 SMO is an austenitic steel with high molybdenum content and a very high austenitic stainless steel grade. It is coupled Nickel and Copper. IT is designed with combination pitting and crevice corrosion and impact toughness resistance to chloride stress corrosion cracking. 254 SMO grade has twice the strength of Stainless steel 300 series.

### Chemical Composition ( Typical )

Element	Limits	
	min	max
C	0.000	0.020
Cr	19.500	20.500
Fe	REMAINDER	
Mo	6.000	6.500
Mn	0.000	1.000
N	0.180	0.220
Ni	17.500	18.500
P	0.000	0.030
S	0.000	0.010
Si	0.000	0.800

### Mechanical Properties ( Typical )

Parameter	Value
Yield 0.2 % ( Mpa/Nmm <sup>2</sup> ), Min	300
Tensile ( Mpa/Nmm <sup>2</sup> ), Min	650
Elongation (% in 50MM ), Min	35
Reduction Area(%), Min	50
Hardness ( HRC ), Max	270

### Physical Properties

Parameter	Value
Density ( Kg/m <sup>3</sup> )	8000
Elastic Modulus ( Gpa )	195
*Co-eff of Expansion ( $\mu\text{m}/\text{m}/^\circ\text{C}$ )	16.5
*Thermal Condc. (W/m.K)	14
Electric Resistivity (n $\Omega$ .m) 25°C	882

\*Note : @20°C

### Corrosion Data

Corrosion resistance of Stainless Steel grade 254 SMO is excellent in sea water and concentrated halie environments. It has resistance to crevice corrosion and has low magnetic permeability. 254 SMO has high resistance to corrosion cracking and have excellent ductility and impact strength at both ambient and sub-zero temperatures.

## Equivalent Grade Designation

Alloy 254  
254 SMO  
UNS S31254  
EN DIN 1.4547  
X1CrNiMoCuN20-18-7  
W.Nr. 1.4529  
SS 2378  
AFNOR Z1 CNDU 20.18.06AZ

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## Available Product Forms

Round, Square, Hexagon ,Flat Bars & Wires  
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  
Ferrule Compression Fittings  
Welding Consumables

## Common Manufacturing Specifications

ASTM A182, ASTM A213, ASTM A249, ASTM A269, ASTM A276, ASTM A312, ASTM A358, ASTM A409, ASTM A473, ASTM A479, NFA 49-217, EN 10216-5, EN 10088-3.

## Alternate to Alloy

INCOLOY® alloy 25-6HN (UNS N08367), 1925 hMo & 25-6 Mo are similar with respect to significant performance characteristic.

## Applications & Industries

Chemical process Industry  
Marine Industry and shipbuilding  
Oil and Gas Industry  
Pulp and Paper Industry  
Power Industry  
Desalination Industry

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#1016 Prasad Chambers Opera House Mumbai 400004 INDIA

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

[www.ferrobend.com](http://www.ferrobend.com)