

## Hastelloy C22 / UNS N06022 / DIN 2.4602

Nickel-Chromium-Moly-Tungsten Alloy

Alloy C22 Data Sheet

### Introduction

Hastelloy C22 is most Flexible Austenitic Tungsten added Nickel-Chrome-Molybdenum Alloy with increased resistance to stress, crevice & pittings corrosion. Most suitable alloy for chemical process applications in as-welded conditions. Alloy C22 has excellent overall general & localized corrosion resistance.

#### Chemical Composition ( Typical )

Element	Limits	
	min	max
Carbon	0.000	0.150
Manganese	0.000	0.500
Silicon	0.000	0.080
Sulphur	0.000	0.020
Phosphorus	0.000	0.020
Chromium	20.000	22.500
Molybdenum	12.500	14.500
Cobalt	0.000	2.500
Tungsten	2.500	3.500
Vanadium	0.000	0.350
Nickel	Remainder	

#### Mechanical Properties ( Typical )

Parameter	Value
Yield 0.2 % ( Mpa/Nmm <sup>2</sup> ), Min	310
Tensile ( Mpa/Nmm <sup>2</sup> ), Min	690
Elongation (% in 50MM ), Min	45
Reduction Area(%), Min	--
Hardness ( HRB ), Max	95

#### Physical Properties

Parameter	Value
Density ( Kg/m <sup>3</sup> )	8690
Elastic Modulus ( Gpa )	203
*Co-eff of Expansion ( $\mu\text{m}/\text{m}/^\circ\text{C}$ )	12.4
*Thermal Condc. (W/m.K)	10.1
*Electric Resistivity (n $\Omega$ .m)	1140

\*Note : @500°C

#### Corrosion Data

Hastelloy C22 is primarily known corrosion resistant alloy for chemical process industry. Hastelloy C22 has highest inclass pitting resistance. Alloy C22 has excellent resistance to crevice corrosion & stress corrosion cracking. Chromium alloy provides resistance to oxidizing medium while molybdenum & tungsten provides resistance to reducing medium. Alloy C22 also has good resistance to diluted oxidizing acids like chlorides, formic acid, acetic acid, ferric & cupric acids.

## Equivalent Grade Designation

Hastelloy C22  
Alloy C22  
UNS N06022  
W. Nr./EN 2.4602  
DIN 2.4602

Alloy C22 Data Sheet

## 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 B333, ASTM B335, ASTM B366, ASTM B564, ASTM B619, ASTM B622, ASTM B626, ASME SB333, ASME SB335, ASME SB366, ASME SB564, ASME SB619, ASME SB622, ASME SB626

## Alternate to Alloy

Hastelloy B2, B3, C4 & hastelloy C276 can be used alternative to C22 for higher concentration of Hydrochloric & hydrofluoric acids.

## Applications & Industries

Chemical & Pharmaceutical Industries  
Chlorination Systems  
Herbicides, Insecticides & Pesticides production  
Waster water treatment, Sulphur dioxide scrubbers etc  
Valves, Pumps, Fasteners - Nuts, Bolts, Washer, Anchor Rods  
Chemical processing industries including paper & pulp bleaching plants, Pickling systems etc  
Nuclear Fuel Re-processing

# Excellence Inherent

With 3 decade long experience inherited, we aim at providing better solutions for Industrial Piping Sector. Skilled Team, passion drives our *will* to be better with resolute for continous customer & vendor concurrence. We also perceive our duty towards planet for its unconditional support & try to minimise any harm caused due to our activity. For Instance, *We Stay Paperless*

The Information contained in this data sheet is for reference purpose only and actual data may vary from product to product. Complete rely on these values for product design recommended. User will be solely responsible for any failure in intended construction. FERROBEND™ is trademark Property of FERROBEND.



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