

# Hastelloy C-22 Datasheet

Hastelloy C22 provides outstanding corrosion resistance in oxidizing and reducing environments for chemical processing applications.

<b>Alloy / Grade</b>	Hastelloy C-22
<b>Common Forms</b>	Polished Sheet, Plate, Tube, Bar, Wire.
<b>Key Feature</b>	Better resistance to oxidizing chemicals than C-276.
<b>Service Focus</b>	Outperforms C-276 in oxidizing acids, wet chlorine, and mixtures containing nitric acid or oxidizing salts.

## 1. Product Overview

Hastelloy C-22 is a versatile nickel-chromium-molybdenum-tungsten alloy with better overall corrosion resistance than other Ni-Cr-Mo alloys, including C-276. It provides superior protection against pitting, crevice corrosion, and stress corrosion cracking in stagnant or reducing environments.

Grade	Core Description	Typical Service Focus
Hastelloy C-22	Hastelloy C-22 is a versatile nickel-chromium-molybdenum-tungsten alloy with better overall corrosion resistance...	While C-276 is the industry workhorse, C-22 is the upgrade. The increased Chromium content (approx. 22%)...
Supply Capability	Polished Sheet, Plate, Tube, Bar, Wire.	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Outperforms C-276 in oxidizing acids, wet chlorine, and mixtures containing nitric acid or oxidizing salts.

## 2. Key Features

- While C-276 is the industry workhorse, C-22 is the upgrade. The increased Chromium content (approx. 22%) gives it significantly better resistance...
- Outperforms C-276 in oxidizing acids, wet chlorine, and mixtures containing nitric acid or oxidizing salts.
- Due to its clean weldability and resistance to bio-film buildup, it is the standard for sterile processing equipment.
- Exceptional resistance to crevice corrosion, preventing leaks in gaskets, flanges, and sediment-prone areas.

<b>Further information under:</b>	<a href="https://www.nickelcasting.com/nickel-alloys/hastelloy-nickel-alloys/hastelloy-c-22/">https://www.nickelcasting.com/nickel-alloys/hastelloy-nickel-alloys/hastelloy-c-22/</a>
<b>Home page:</b>	<a href="http://www.nickelcasting.com">www.nickelcasting.com</a>
<b>Email:</b>	<a href="mailto:ni@Nickelcasting.com">ni@Nickelcasting.com</a>

## Technical Data

The following values are provided as general reference data for engineering review and procurement planning. Confirm final values against the applicable specification, product form, heat treatment condition and material certificate.

### 3. Chemical Composition (%)

Element	Content (%)
Nickel (Ni)	56.0 min (Balance)
Chromium (Cr)	20.0 - 22.5
Molybdenum (Mo)	12.5 - 14.5
Tungsten (W)	2.5 - 3.5
Iron (Fe)	2.0 - 6.0
Cobalt (Co)	2.5 max
Carbon (C)	0.01 max

### 4. Standard Specifications

Product Form	ASTM / ASME Standards
Plate, Sheet, Strip	ASTM B575, ASME SB575
Pipe (Seamless)	ASTM B622, ASME SB622
Pipe (Welded)	ASTM B619, ASME SB619
Bar & Rod	ASTM B574, ASME SB574
Fittings	ASTM B366, ASME SB366
Forgings	ASTM B564, ASME SB564

### 5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	100 - 120 ksi (690 - 827 MPa)
Yield Strength (0.2% Offset)	45 - 60 ksi (310 - 414 MPa)
Elongation	45 - 60 %
Hardness (Rockwell B)	85 - 95 HRB

Note: Values are typical or specification reference values. Purchase requirements should be confirmed against the required standard, drawing and material test report.

# Applications and Ordering Information

Use this section to define inquiry requirements and accelerate technical confirmation for Hastelloy C-22 products.

## 6. Typical Applications

Industry / Area	Typical Components
Industrial Service	High-integrity forged blocks and fasteners that prevent localized pitting and failure in critical high-purity assemblies.
Chemical / Process Equipment	Reactors, heat exchangers, and storage tanks requiring electropolished surfaces and guaranteed sterility.
Oil, Gas & Marine	Equipment for the production of herbicides and insecticides involving complex acid mixtures.
High-Temperature / Power	Components exposed to sulfuric acid baths where pitting resistance is critical.
Precision Components	Systems handling wet chlorine gas and bleach where stainless steel fails rapidly.

## 7. Available Supply Forms

Pipe & Tube	Plate & Sheet	Bar & Rod
Pipe Fittings	Flanges	Wire & Strip
Forgings	Custom Cutting	Project Supply

## 8. Information to Include When Requesting a Quote

- Required grade: Hastelloy C-22, with ASTM / ASME / AMS specification if applicable.
- Product form: pipe, tube, plate, sheet, bar, fittings, flanges, forgings or machined parts.
- Dimensions: outside diameter, wall thickness, length, width, thickness or drawing number.
- Quantity, delivery destination and required delivery schedule.
- Special requirements: cutting, machining, heat treatment, NDT, PMI, test report or material certificate.

Company Information	
Address	Shanghai, China
Email	ni@Nickelcasting.com
Home Page	www.nickelcasting.com
Product Page	<a href="https://www.nickelcasting.com/nickel-alloys/hastelloy-nickel-alloys/hastelloy-c-22/">https://www.nickelcasting.com/nickel-alloys/hastelloy-nickel-alloys/hastelloy-c-22/</a>

## Disclaimer

This datasheet is provided for general reference only. Actual values may vary by product form, heat treatment, manufacturing condition and applicable specification. Please contact us for confirmed specifications, test reports and material certificates before ordering.