Haynes 188 Datasheet

Haynes 188 is a cobalt-based alloy with excellent oxidation resistance and thermal stability for gas turbine applications.

Alloy / Grade	Haynes 188
Common Forms	Sheet, Strip, Plate, Bar.
Key Feature	Outstanding oxidation resistance + Thermal stability.
Service Focus	Resists oxidation at temperatures up to 2100 deg F (1150 deg C). The minute Lanthanum addition creates an incredibly stable and adherent oxide layer.

1. Product Overview

Haynes 188 is a cobalt-nickel-chromium-tungsten alloy that combines excellent high-temperature strength with outstanding resistance to oxidizing environments up to 2000 deg F (1095 deg C) for prolonged periods. The controlled addition of lanthanum gives it superior oxidation resistance compared to Haynes 25 .

Grade	Core Description	Typical Service Focus
Haynes 188	Haynes 188 is a cobalt-nickel-chromium-tungsten alloy that combines excellent high-temperature strength with...	Haynes 188 is the material of choice for critical components in gas turbine engines, such as combustors and...
Supply Capability	Sheet, Strip, Plate, Bar.	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Resists oxidation at temperatures up to 2100 deg F (1150 deg C). The minute Lanthanum addition creates an...

2. Key Features

- Haynes 188 is the material of choice for critical components in gas turbine engines, such as combustors and flame holders. While sharing the...
- Resists oxidation at temperatures up to 2100 deg F (1150 deg C). The minute Lanthanum addition creates an incredibly stable and adherent oxide layer.
- Maintains ductility after long-term aging at elevated temperatures better than Haynes 25, reducing the risk of embrittlement.
- Excellent resistance to sulfate deposit hot corrosion, making it ideal for jet engines operating in marine environments.

Further information under:	https://www.nickelcasting.com/nickel-alloys/haynes-metal-alloys/haynes-188/
Home page:	www.nickelcasting.com
Email:	ni@Nickelcasting.com

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 (%)
Cobalt (Co)	39.0 min (Balance)
Nickel (Ni)	20.0 - 24.0
Chromium (Cr)	21.0 - 23.0
Tungsten (W)	13.0 - 15.0
Iron (Fe)	3.0 max
Lanthanum (La)	0.03 - 0.15
Carbon (C)	0.05 - 0.15

4. Standard Specifications

Product Form	Standards (AMS)
Sheet, Strip, Plate	AMS 5608
Bar, Forgings, Rings	AMS 5772
Pipe & Tube	AMS 5586

5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	135 - 150 ksi (930 - 1035 MPa)
Yield Strength (0.2% Offset)	60 - 75 ksi (415 - 515 MPa)
Elongation	45 - 55 %
Hardness (Rockwell B)	90 - 98 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 Haynes 188 products.

6. Typical Applications

Industry / Area	Typical Components
Industrial Service	The primary application: inner walls of jet engine combustors exposed to extreme heat and gas velocity.
Chemical / Process Equipment	Components in afterburners and exhaust ducts that stabilize the flame.
Oil, Gas & Marine	Ducting that guides hot gases from the combustor to the turbine section.
High-Temperature / Power	Fuel injection systems located within the hot section of the engine.
Precision Components	We stock aerospace-grade Haynes 188. Full traceability and certification to AMS 5608/5772 included.

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: Haynes 188, 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	https://www.nickelcasting.com/nickel-alloys/haynes-metal-alloys/haynes-188/

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.