

Haynes 25 Datasheet

Haynes 25 is a cobalt-based alloy offering high strength, oxidation, and wear resistance at elevated temperatures.

Alloy / Grade	Haynes 25
Common Forms	Sheet, Strip, Bar, Wire .
Key Feature	High strength + Galling Resistance.
Service Focus	The cobalt matrix provides exceptional resistance to wear and seizing, crucial for components that rotate or slide against each other at high...

1. Product Overview

Haynes 25 (L605) is a cobalt-nickel-chromium-tungsten alloy that combines excellent high-temperature strength with good oxidation resistance up to 1800 deg F (980 deg C). It is the strongest of the fabricable cobalt alloys and offers superior resistance to sulfidation and metal galling.

Grade	Core Description	Typical Service Focus
Haynes 25	Haynes 25 (L605) is a cobalt-nickel-chromium-tungsten alloy that combines excellent high-temperature strength...	Haynes 25 is the preferred material for gas turbine parts and industrial furnace components where both high...
Supply Capability	Sheet, Strip, 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	The cobalt matrix provides exceptional resistance to wear and seizing, crucial for components that rotate...

2. Key Features

- Haynes 25 is the preferred material for gas turbine parts and industrial furnace components where both high heat and wear are present. Its cobalt...
- The cobalt matrix provides exceptional resistance to wear and seizing, crucial for components that rotate or slide against each other at high...
- Retains high tensile and creep strength at temperatures up to 1800 deg F, outperforming many stainless steels and nickel alloys .
- Excellent resistance to hot corrosion in atmospheres containing sulfur, marine salts, and other harsh contaminants.

Further information under:	https://www.nickelcasting.com/nickel-alloys/haynes-metal-alloys/haynes-25/
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)	50.0 min (Balance)
Chromium (Cr)	19.0 - 21.0
Tungsten (W)	14.0 - 16.0
Nickel (Ni)	9.0 - 11.0
Iron (Fe)	3.0 max
Manganese (Mn)	1.0 - 2.0
Carbon (C)	0.05 - 0.15

4. Standard Specifications

Product Form	Standards (AMS)
Bar, Forgings , Rings	AMS 5759
Sheet, Strip, Plate	AMS 5537
Wire	AMS 5796

5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	145 - 160 ksi (1000 - 1100 MPa)
Yield Strength (0.2% Offset)	65 - 80 ksi (450 - 550 MPa)
Elongation	30 - 50 %
Hardness (Rockwell C)	20 - 25 HRC (Annealed)

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 25 products.

6. Typical Applications

Industry / Area	Typical Components
Industrial Service	Custom bolts and studs that leverage the alloy's natural galling resistance, preventing seizing at up to 1800 deg F.
Chemical / Process Equipment	Combustion chambers, afterburner parts, turbine rings, and blades.
Oil, Gas & Marine	Ball bearings and races requiring high temperature wear resistance.
High-Temperature / Power	High-temperature muffles, kiln liners, and conveyor belts.
Precision Components	Occasionally used in specialized surgical implants due to biocompatibility and strength (ASTM F90).

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 25, 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
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Home Page	www.nickelcasting.com
Product Page	https://www.nickelcasting.com/nickel-alloys/haynes-metal-alloys/haynes-25/

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.