

# Cobalt Alloy 6B Datasheet

Cobalt Alloy 6B is known for its wear resistance and toughness, perfect for extreme environments and industrial tools.

<b>Alloy / Grade</b>	Cobalt Alloy 6B
<b>Common Forms</b>	Plate, Sheet, Flat Bar , Round Bar .
<b>Key Feature</b>	Anti-galling & wear resistance with high toughness.
<b>Service Focus</b>	Excellent resistance to cavitation, slurry erosion, and sliding wear. It keeps a sharp edge longer than steel or titanium.

## 1. Product Overview

Cobalt Alloy 6B is a cobalt-based chromium-tungsten alloy. Unlike most wear-resistant materials which are cast and brittle, Alloy 6B is wrought (hot worked). This imparts excellent toughness and shock resistance while maintaining high resistance to seizure, galling, and abrasion.

Grade	Core Description	Typical Service Focus
Cobalt Alloy 6B	Cobalt Alloy 6B is a cobalt-based chromium-tungsten alloy. Unlike most wear-resistant materials which are cast...	Alloy 6B solves a specific engineering problem: How to prevent wear in parts subjected to impact or shock?...
Supply Capability	Plate, Sheet, Flat Bar , Round Bar .	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Excellent resistance to cavitation, slurry erosion, and sliding wear. It keeps a sharp edge longer than...

## 2. Key Features

- Alloy 6B solves a specific engineering problem: How to prevent wear in parts subjected to impact or shock? Hard-facing and cast alloys often crack...
- Excellent resistance to cavitation, slurry erosion, and sliding wear. It keeps a sharp edge longer than steel or titanium.
- Exceptionally low coefficient of friction. It resists seizing and galling when sliding against other metals, even without lubricants.
- Because it is hot-worked, it has ductility and impact strength far superior to cast cobalt alloys or ceramics.

<b>Further information under:</b>	<a href="https://www.nickelcasting.com/nickel-alloys/cobalt-alloy-6b/">https://www.nickelcasting.com/nickel-alloys/cobalt-alloy-6b/</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 (%)
Cobalt (Co)	Balance (approx 58%)
Chromium (Cr)	28.0 - 32.0
Tungsten (W)	3.5 - 5.5
Nickel (Ni)	3.0 max
Iron (Fe)	3.0 max
Carbon (C)	0.9 - 1.4
Molybdenum (Mo)	1.5 max

### 4. Standard Specifications

Product Form	Standards (AMS / ASTM)
Bar, Forgings, Sheet, Plate	AMS 5894
Testing	ASTM E8 (Tensile), ASTM E23 (Impact)

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

Property	Typical Values (Room Temp)
Tensile Strength	145 ksi (1000 MPa)
Yield Strength (0.2% Offset)	90 ksi (620 MPa)
Elongation	11 - 13 %
Hardness (Rockwell C)	33 - 43 HRC (Typical 36-38)
Modulus of Elasticity	33.5 x 10 <sup>6</sup> psi

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 Cobalt Alloy 6B products.

## 6. Typical Applications

Industry / Area	Typical Components
Industrial Service	Steam turbine leading edges (erosion shields) protecting blades from water droplet erosion.
Chemical / Process Equipment	Saw blades, scraper blades, and knives for cutting rubber, textiles, and food products.
Oil, Gas & Marine	Sleeve bearings, bushings, and wear pads in high-temperature or corrosive environments.
High-Temperature / Power	Valve balls, seats, and stems requiring resistance to steam erosion and high-pressure fluids.
Precision Components	We stock Cobalt Alloy 6B (AMS 5894) in sheet, plate, and flat bar. We also offer waterjet cutting to your specific dimensions.

## 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: Cobalt Alloy 6B, 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/cobalt-alloy-6b/">https://www.nickelcasting.com/nickel-alloys/cobalt-alloy-6b/</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.