

AL6XN Datasheet

AL6XN offers outstanding resistance to corrosion and pitting, ideal for chemical processing and marine environments.

Alloy / Grade	AL6XN
Common Forms	Plate, Sheet, Pipe, Sanitary Tube, Bar.
Key Feature	Exceptional resistance to Chloride Pitting & Crevice Corrosion.
Service Focus	Designed to resist pitting and crevice corrosion in hot seawater and chloride solutions where 316L and 317L fail.

1. Product Overview

AL6XN is a superaustenitic stainless steel containing 6% molybdenum and enhanced with nitrogen. It was specifically developed to fill the gap between standard 316 stainless steels and the more expensive nickel-base alloys (like Inconel 625), particularly in high-chloride environments.

Grade	Core Description	Typical Service Focus
AL6XN	AL6XN is a superaustenitic stainless steel containing 6% molybdenum and enhanced with nitrogen. It was...	In environments like seawater or food processing where chlorides are present, standard 316L stainless steel...
Supply Capability	Plate, Sheet, Pipe, Sanitary Tube, Bar.	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Designed to resist pitting and crevice corrosion in hot seawater and chloride solutions where 316L and 317L...

2. Key Features

- In environments like seawater or food processing where chlorides are present, standard 316L stainless steel often suffers from pitting (holes) and...
- Designed to resist pitting and crevice corrosion in hot seawater and chloride solutions where 316L and 317L fail.
- Serves as an economical alternative to expensive nickel-based alloys in less severe corrosive environments.
- Widely used in food and pharmaceutical equipment due to its high purity and ease of cleaning (electropolishing).

Further information under:	https://www.nickelcasting.com/nickel-alloys/al6xn/
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 (%)
Nickel (Ni)	23.5 - 25.5
Chromium (Cr)	20.0 - 22.0
Molybdenum (Mo)	6.0 - 7.0
Nitrogen (N)	0.18 - 0.25
Iron (Fe)	Balance
Carbon (C)	0.03 max

4. Standard Specifications

Product Form	ASTM / ASME Standards
Plate, Sheet, Strip	ASTM A240, ASME SB688
Bar & Rod	ASTM B691, ASME SB691
Pipe (Welded)	ASTM B673, ASME SB673
Sanitary Tubing	ASTM A270 (BPE)
Forgings	ASTM B462, ASME SB462

5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	100 - 110 ksi (690 - 760 MPa)
Yield Strength (0.2% Offset)	45 - 55 ksi (310 - 380 MPa)
Elongation	30 - 50 %
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 AL6XN products.

6. Typical Applications

Industry / Area	Typical Components
Industrial Service	*Note: Significantly higher yield strength than 316L (approx 30 ksi).
Chemical / Process Equipment	Mixing tanks, vats, and piping for ketchup, salsa, vinegar, and sports drinks (high salt/acid content).
Oil, Gas & Marine	Heat exchangers, condensers, and desalination equipment handling brackish water or seawater.
High-Temperature / Power	Bleach plant washers , vats, and rollers exposed to oxidizing chlorine compounds.
Precision Components	Flue gas desulfurization (FGD) scrubbers and spray systems.

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: AL6XN, 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/al6xn/

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.