HONGCHEN METAL
INDUSTRIAL METAL MATERIALS

PRODUCT DATA SHEET
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PRODUCT SPECIFICATIONS · BAR

Stainless Steel 316L Round Bar

Chemical composition, mechanical properties and material characteristics

Features

- 316L stainless steel has a lower proportion of carbon in its composition.
- To qualify as 316L stainless steel, the amount of carbon cannot exceed 0.03%.
- This decreases the risk of carbon precipitation, making it a better option for welding to ensure maximum corrosion resistance.

Typical Applications

- Stainless steel bars are used in a variety of industries such as shipbuilding, Defense, Automotive, Textiles, Paper and pulp, Manufacturing, Cement, Heavy earthmoving equipment and construction, etc.

Product Parameters

Product Name	316L Stainless Steel Bar
Type	Corrosion-Resistant Alloy / Stainless Steel
Standard	ASTM, AISI, JIS, GB, DIN, EN, etc.
Surface	Black, Bright Polished, Rough Turning, Mattness Surface Treatment, No. 4. BA, etc.
Delivery Condition	Annealed / solution annealed; other tempers available by agreement.
Scope of Application	Stainless steel bars are used in a variety of industries such as shipbuilding, Defense, Automotive, Textiles, Paper and pulp, Manufacturing, Cement, Heavy earthmoving equipment and construction, etc.
Certificate	ISO / SGS / BV and EN 10204 3.1 MTC available; third-party inspection and PMI can be arranged per purchase order.
Production Technology	Hot rolling or cold rolling / drawing according to product form; solution treatment and pickling / passivation applied where corrosion performance or surface quality require it. Hot-rolled, forged or cold-drawn routes depending on size; cut-to-length available.
Edge Processing	Cut ends as standard; chamfering, deburring, peeling or centerless grinding available on request.
Outer Diameter	Round Bar
Hexagon Bar	18mm-57mm (11/16″ to 2-3/4″)
Square Bar	18mm-47mm (11/16″ to 1-3/4″)
Flat Steel	1/2 "to 10", Thickness: 2mm-150mm, Can provide customized
Length	1-6 meters, Length can be customized

Chemical Composition

C	Si	Mn	Cr	Ni	S	P	Mo
≤ 0.03	≤1.0	≤ 2.0	16.0～18.0	10.0～14.0	≤ 0.03	≤ 0.045	2.0～3.0

Mechanical Properties

Tensile Strength Kb (MPa)	Yield Strength σ0.2 (MPa)	Elongation D5 (%)	Hardness
≥480	≥177	≥40	≤187HB;≤90HRB;≤200HV

Physical Performance

Density(g/cm³)	Modulus of Elasticity(Gpa)	Coefficient of Thermal Expansion(10 -6 /°C)	Coefficient of Thermal Conductivity(W/m * K)	Resistivity(MΩ. cm)
7.99	193	1 6.0	16.2	74

Selection note: match grade to medium, temperature, chloride level and whether as-welded corrosion service is required.

Related Properties

Corrosion Resistance	Mo-bearing corrosion resistance similar to 316, with low carbon for welded components that stay in corrosive service. Suitable for many pharmaceutical, food and chemical fabrications when media limits are respected.
Formability	Most austenitic corrosion grades form well by bending, rolling, deep drawing and stamping when tooling radii, lubrication and springback are set for the thickness and temper. Work hardening raises strength during cold work; intermediate anneal may be needed for severe multi-stage forming.
Weldability	Excellent choice for welded corrosive assemblies. Use low-carbon Mo-bearing filler, control interpass temperature, and finish with pickling/passivation where hygiene or corrosion margin is critical.
Surface & Cleanliness	Final corrosion behavior is strongly affected by surface finish, free iron contamination and weld discoloration. Pickling, passivation or electropolishing after fabrication is often as important as grade selection for sanitary, marine and chemical equipment.
Selection Notes	Use molybdenum-bearing or higher-alloy variants when pitting, crevice attack or stronger chemical media are expected. Confirm product form (plate, tube, bar, wire) and heat-treatment condition against the project specification before ordering.

Material guidance for your next project

Send your grade, size and application requirements to our team.

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