HONGCHEN METAL
INDUSTRIAL METAL MATERIALS

PRODUCT DATA SHEET
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PRODUCT SPECIFICATIONS · PIPE

Stainless Steel 316 Pipe

Chemical composition, mechanical properties and material characteristics

Features

- 316 stainless steel also contains 2-3% molybdenum, in addition to iron, chromium and nickel.
- The addition of molybdenum significantly improves the performance of 316 stainless steel in certain corrosive environments, especially those containing chlorides.
- 316 stainless steel is more commonly used in situations requiring higher corrosion resistance.

Typical Applications

- Common applications for stainless steel pipes include food processing, Textile operations, Breweries, Water treatment plants, Oil and gas processing, Fertilizers and pesticides, Chemical applications, Construction, Pharmaceuticals, Auto parts, etc.

Product Parameters

Product Name	316 Stainless Steel Pipe
Type	Corrosion-Resistant Alloy / Stainless Steel
Standard	ASTM, AISI, JIS, GB, DIN , EN, etc.
Surface	Black, Bright Polished, Rough Turning, Matt Surface Treatment, No. 4. BA, etc.
Delivery Condition	Annealed / solution annealed; other tempers available by agreement.
Scope of Application	Common applications for stainless steel pipes include food processing, Textile operations, Breweries, Water treatment plants, Oil and gas processing, Fertilizers and pesticides, Chemical applications, Construction, Pharmaceuticals, Auto parts, 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. Seamless or welded supply routes depending on size; cut-to-length and end preparation available.
Edge Processing	Plain, beveled or threaded ends available on request; end finishing and length tolerance per order.
Outer diameter	Round Tube
Square Tube	10*10mm-100*100mm
Rectangular Tube	10*20mm-50*100mm
Wall Thickness	0.6mm-6.0mm
Length	1-6 meters, Length can be customized

Chemical Composition

C	Si	Mn	Cr	Ni	S	P	Mo
≤ 0.03	≤ 0.75	≤ 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	Molybdenum addition improves pitting and crevice resistance versus 304 in many chloride-bearing mild-to-moderate media, coastal atmospheres and chemical process streams. Seawater and strong reducing acids still need case-by-case confirmation.
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	Generally weldable with common fusion processes. For as-welded corrosive service, prefer low-carbon (L) or stabilized grades, control heat input, and specify filler that preserves corrosion resistance in the weld metal and HAZ. Post-weld cleaning and passivation improve finished performance.
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	Common upgrade from 304 when chlorides or chemical exposure increase. Prefer 316L for welded corrosive service; consider duplex or 6Mo grades if pitting risk remains high.

Material guidance for your next project

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

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