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317L Stainless Steel
UNS S31703

Alloy 317L is a low-carbon, high molybdenum austenitic stainless steel with a higher nickel alloy content than 316L. Developed to resist the attack of sulfuric acid compounds, this alloy combines good corrosion resistance with excellent mechanical properties and ease of fabrication. These alloys are frequently used for flue gas desulfurization services in fossil-fuel power plants. Compared to other austenitic stainless steels, 317L offers a higher creep strength, stress to rupture, and tensile strength at elevated temperatures.

317L Chemical Composition

- C — Carbon - 3.00% maximum
- Mn — Manganese - 2.00% maximum
- Si — Silicon - 1.00% maximum
- Cr — Chromium - 18.00 - 20.00%
- Ni — Nickel - 11.00 - 15.00%
- Mo — Molybdenum - 17.00 - 19.00%
- P — Phosphorous - 4.50% max
- S — Sulfur - 0.030% maximum
- N — Nitrogen --
- Fe — Iron - Balance

Standard Inventory Specifications

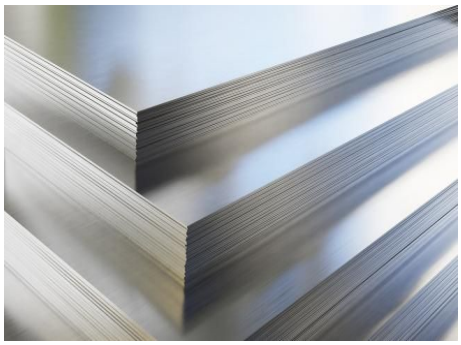
- UNS S31703 - 317L
- ASTM A 240
- ASTM A182
- ASTM A167
- ASME SA 240

Forms Stocked

- Rolled Strip - 0.0008” - 0.015”

Applications

- Flue gas desulfurization systems found in fossil fuel plants
- Chemical and Petrochemical Processing
- Food and Beverage Processing
- Power Generation — condensers
- Pulp and Paper Processing
- Textiles with acid dyes



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Features

- Good corrosion resistance
- Good mechanical properties
- Ease of fabrication
- Produces stronger welds due to lower carbon content
- Resists the attack of sulfuric acid compounds

Resistance to Corrosion: Type 317 is more resistant to atmospheric and other mild types of corrosion than Types 302, 304 and 304L. In general, media that do not corrode Types 302, 304, and 304L, will not attack these molybdenum-containing grades. One known exception is highly oxidizing acids such as nitric acid to which the molybdenum-bearing stainless steels are less resistant.

Physical Properties

- Density: 0.285 lb/in^3
- Thermal Conductivity, Btu/ft hr°F : 8.7
- Electrical Resistivity, Ω-inch: 33.5 x 10^{-6}

Mechanical Properties

Grade	Ultimate Tensile Strength, ksi		0.2% Offset Yield Strength, ksi		Elongation in 2”		Hardness, Rockwell B	
	Value	ASTM	Value	ASTM	Value	ASTM	Value	ASTM
317L	89	75 min	46	30 min	53	40 min	80	95 max