

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" - 0.012"

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



Call 1.888.282.3292

Or click here to view our product page and request a quote on 317 stainless

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

The technical data provided is for information only and not for design purposes. It is not warranted or guaranteed.

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/in³
- 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 |