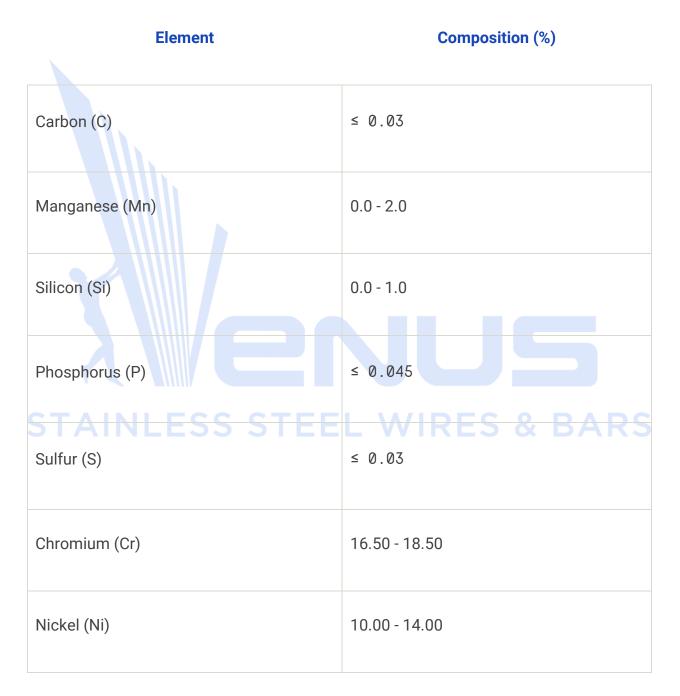
Description

316L/1.4404 stainless steel is an austenitic grade of stainless steel known for its excellent corrosion resistance, particularly in chloride environments. It is a low-carbon variant of 316 stainless steel, which enhances its weldability and reduces the risk of sensitization during welding.

Chemical Composition

The typical chemical composition of **316L/1.4404** stainless steel is as follows:



| Molybdenum (Mo) | 2.00 - 2.50 |
|-----------------|-------------|
| Iron (Fe) | Balance |

Mechanical Properties

The mechanical properties of 316L stainless steel include:

| Property | Value |
|-------------------------------|---------------|
| Tensile Strength | 520 - 670 MPa |
| Yield Strength | 220 MPa (min) |
| Elongation (A50 mm) | 40% min |
| Hardness (Brinell) | 217 HB max |
| Thermal & Physical Properties | |

The thermal and physical properties of 316L stainless steel are:

 Property
 Value

 Density
 8.00 g/cm³

Property

Value

| Melting Point | 1400 °C |
|-----------------------|----------------------------|
| Modulus of Elasticity | 193 GPa |
| Thermal Conductivity | 16.3 W/m·K |
| Thermal Expansion | 15.9 x 10 ⁻⁶ /K |

Other Designations

316L stainless steel is also known by various designations, including:

- UNS S31603
- DIN 1.4404
- JIS SUS316L
- GB 022Cr17Ni12Mo2

Fabrication and Heat Treatment WIRES & BARS

- Welding: 316L stainless steel is easily weldable using standard techniques, and post-weld annealing is typically not required.
- Machining: It can be machined effectively, though it tends to work harden if machined too quickly. Low speeds and constant feed rates are recommended.
- Hot Working: Optimal hot working temperatures range from 1150 °C to 1260 °C, with post-work annealing recommended for corrosion resistance.
- Cold Working: Common operations include shearing, drawing, and stamping, with post-work annealing to relieve internal stresses.

Applications

316L/1.4404 stainless steel is widely used in various industries due to its excellent corrosion resistance and mechanical properties. Typical applications include:

- Marine equipment
- Chemical processing
- Pharmaceutical equipment
- Food and beverage processing
- Pulp and paper production
- Heat exchangers
- Dyeing and film processing equipment
- Construction materials in coastal areas

Supplied Form

316L stainless steel is available in various forms, including:

- Sheets and plates
- Bars and rods
- Tubes and pipes
- Wire and profiles

Features

- Superior corrosion resistance, especially in chloride environments.
- Excellent weldability and formability.
- Good mechanical properties at elevated temperatures.
- Resistance to pitting and crevice corrosion.

DIN Number

The DIN number for 316L stainless steel is 1.4404.

This datasheet provides a comprehensive overview of **316L/1.4404** stainless steel, highlighting its properties, applications, and characteristics suited for various industrial uses.