

317L is a molybdenum containing austenitic stainless steel, with improved corrosion resistance over 304/304L and 316/316L stainless steel. The increased levels of chromium, nickel and molybdenum over 316L stainless steel improve chloride pitting resistance and general corrosion. Through the controlled addition of nitrogen it is common for 317L to meet the mechanical properties of 317 straight grade, while maintaining a low carbon content.

## Specifications

**UNS:** S31700, S31703 **ASTM:** A 240 **ASME:** SA-240

## Chemical Composition, %

|     | Ni   | Cr   | Mo  | Mn  | Si   | C    | N   | S    | P     | Fe      |
|-----|------|------|-----|-----|------|------|-----|------|-------|---------|
| MIN | 11.0 | 18.0 | 3.0 | —   | —    | —    | —   | —    | —     | —       |
| MAX | 15.0 | 20.0 | 4.0 | 2.0 | 0.75 | 0.03 | 0.1 | 0.03 | 0.045 | balance |

## Features

- Improved general and localized corrosion to 304/304L and 316/316L stainless
- Good formability
- Good weldability

## Applications

- FGD systems
- Chemical process vessels
- Petrochemical
- Pulp and paper
- Condensers in power generation

## Physical Properties

**Density:** 0.285 lb/in<sup>3</sup> **Melting Range:** 2540-2630°F **Poisson's Ratio:** 0.3 **Electrical Resistivity:** 475 Ohm-circ mil/ft

|   |     |     |      |      |
|---|-----|-----|------|------|
| Temperature, °F   | 70  | 212 | 392  | 572  |
| Coefficient* of Thermal Expansion, in/in°F x 10 <sup>-6</sup> | —   | 9.2 | 10.1 | 10.8 |
| Thermal Conductivity, Btu • ft/ft <sup>2</sup> • hr • °F      | 7.8 | 8.4 | —    | —    |
| Modulus of Elasticity Dynamic, psi x 10 <sup>6</sup>          | 29  | —   | —    | —    |

\* 70°F to indicated temperature.

## Mechanical Properties

### Minimum Specified Properties, ASTM A 240

|                                |     |
|--------------------------------|-----|
| Ultimate Tensile Strength, ksi | 75  |
| 0.2% Yield Strength, ksi       | 30  |
| Elongation, %                  | 40  |
| Hardness MAX, Brinell          | 217 |

### Typical Tensile and Impact Properties

|                                |        |      |      |       |      |      |      |      |
|--------------------------------|--------|------|------|-------|------|------|------|------|
| Temperature, °F                | 70     | 200  | 400  | 600   | 800  | 1000 | 1200 | 1400 |
| Ultimate Tensile Strength, ksi | 81.8   | 74.1 | 68.9 | 68.95 | 70.2 | 65.7 | 49.8 | 31.6 |
| 0.2% Yield Strength, ksi       | 36.7   | —    | —    | —     | 21.9 | 20.2 | 19.6 | —    |
| Charpy Impact V-notch, ft-lbd  | 65-100 | —    | —    | —     | —    | —    | —    | —    |

**INTERNATIONAL  
TRADE WINDS<sup>LLC</sup>**  
Exclusive Representative of Rolled Alloys®, Inc.

**CLAUDIO CZARNOBAI**

COMMERCIAL MANAGER

ClaudioCzarnobai@intwinds.com

**F** +55 11 3825 2966

**C** +55 11 99112 2703

