

GENERAL PROPERTIES

Alloy 316/316L is molybdenum-bearing austenitic stainless steel. The higher nickel and molybdenum content in this grade allows it to demonstrate better overall corrosion resistant properties than 304, especially with regard to pitting and crevice corrosion in chloride environments. In addition, Alloy 316/316L provides excellent elevated temperature tensile, creep and stress-rupture strengths, as well as outstanding formability and weldability. 316L is the lower carbon version of 316 and is immune from sensitization; therefore, it is very frequently used in heavy gauge welded components.

Specifications: UNS S31600 / S31603

APPLICATIONS:

- Food preparation equipment, especially in chloride environments
- Chemical processing, equipment
- Laboratory benches and equipment
- Rubber, plastics, pulp & paper machinery
- Pollution control equipment
- Boat fittings, valve and pump trim
- Heat exchangers
- Pharmaceutical and textile industries
- Condensers, evaporators and tanks

STANDARDS:

- ASTM/ASME: UNS S31600 / S31603
- EURONORM: X1 CrNiMo 17 12 2 / X3 CrNiMo 17 12 2
- AFNOR: Z 6 CND 17-11 / Z 2 CND 17-12
- DIN: 1.4401 / 1.4404

CHEMICAL PROPERTIES:

	C	Mn	Si	P	S	Cr	Mo	Ni	N
316 (S31600)	0.08 max	2.0 max	0.75 max	0.045 max	0.03 max	min: 16.0 max: 18.0	min: 2.0 max: 3.0	min: 10.0 max: 14.0	0.10 max
316L (S31603)	0.03 max	2.0 max	0.75 max	0.045 max	0.03 max	min: 16.0 max: 18.0	min: 2.0 max: 3.0	min: 10.0 max: 14.0	0.10 max

MECHANICAL PROPERTIES:

Grade	Tensile Strength ksi (min)	Yield Strength 0.2% ksi (min)	Elongation %	Hardness (Brinell) MAX	Hardness (Rockwell B) MAX
316 (S31600)	75	30	40	217	95
316L (S31603)	70	25	40	217	95

PHYSICAL PROPERTIES:

Density lb _m /in ³	Thermal Conductivity (BTU/h ft. °F)	Electrical Resistivity (in x 10 ⁻⁶)	Modulus of Elasticity (psi x 10 ⁶)	Coefficient of Thermal Expansion (in/in)/°F x 10 ⁻⁶	Specific Heat (BTU/lb/°F)	Melting Range (°F)
0.29 at 68°F	100.8 at 68 212°F	29.1 at 68°F	29	8.9 at 32 – 212°F	0.108 at 68°F	2500 to 2550
				9.7 at 32 – 1000°F	0.116 at 200°F	
				11.1 at 32 – 1500°F		