



# HSM Wire International, Inc

Ph: 330-244-8501 Fax: 330-244-8561

www.hsmwire.com



## Alloy 316 Stainless Steel

**Description:** Alloy 316 is a molybdenum-bearing austenitic stainless steel with greatly increased resistance to chemical attack. Alloy 316 offers higher creep, stress-to-rupture, and tensile strength at elevated temperatures. It is a low carbon grade.

**Applications:** Alloy 316/316L is ideally suited for applications requiring corrosion resistance superior to Type 304 and has good elevated temperature strength.

Nominal Composition:	C	Mn	Si	Cr	Ni	Mo	P
	0.08	2.00	0.75	16 - 18	10 - 14	2 - 3	0.045
	S	N	Fe				
	0.030	0.10	Balance				

### Minimum Mechanical Properties

Ultimate Tensile Strength ksi (MPa)	Yield Strength .2% offset ksi (MPa)	Elongation in 2 in. (%)	Hardness Maximum
75,000 (515)	30,000 (205)	40	217 Brinell / 95 R <sub>B</sub>

### Typical Physical Properties at Room Temperature

Density	8.027 g/cu cm.	0.29 lb/cu in.	Modulus of Shear
Modulus of elasticity in tension	29 x 10 <sup>6</sup> psi	200 GPa	11.9 x 10 <sup>6</sup> psi 82 GPa

### Coefficient of Linear Thermal Expansion

Temp. Range		10 <sup>-6</sup> / °F (10 <sup>-6</sup> / °C)
°F	°C	
68 - 212	20 - 100	9.2 (16.5)
68 - 932	20 - 500	10.1 (18.2)
68 - 1832	20 - 1000	10.8 (19.5)

### Thermal Conductivity

Temp. Range		W/m·K	Btu·in/hr·ft <sup>2</sup> ·°F
°F	°C		
68 - 212	20 - 100	14.6	100.8

### Specific Heat

68°F	20°C	0.108 Btu/lb·°F	450 J/kg·K
200°F	93°C	0.116 Btu/lb·°F	485 J/kg·K

### Electrical Resistivity at Room Temperature

29.1 Microhm-in	74.0 Microhm-cm
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### Melting Range

°F	°C
2450 - 2630	1390 - 1440

