

# HM Wire International, Inc.

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## 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.

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

### Minimum Mechanical Properties

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

### Typical Physical Properties at Room Temperature

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

### Coefficient of Linear Thermal Expansion

<b>Temp. Range °F</b>	<b>Temp. Range °C</b>	<b>10 / °F (10 / °C)</b>
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

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

### Specific Heat

<b>68°F</b>	<b>20°C</b>	0.108 Btu/lb·°F	450 J/kg·K
<b>200°F</b>	<b>93°C</b>	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

<b>°F</b>	<b>°C</b>
2450 - 2630	1390 - 1440

