



# HSM Wire International, Inc

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## Alloy 304 Stainless Steel

**Description:** Alloy 304 (UNS S30400) stainless steel is a variation of the 18% chromium – 8% nickel austenitic alloy, the most familiar and most frequently used alloy in the stainless steel family.

**Applications:** This alloy is considered for a variety of applications and exhibits good corrosion resistance, ease of fabrication, formability, and high strength with low weight.

Nominal Composition:	Fe	Mn	Cr	Cr	Ni	
	65-74	2.00	18 - 20	18 - 20	8- 12	

### Electrical Properties

Specific Resistance (Ω-CM/F)	Specific Resistivity (μΩ-cm <sup>2</sup> /cm)	Commercial Resistance Tolerance (0.020 and below)	Temperature Coefficient of Resistance (ohms/ohm/Deg. C {0 to 100°C})	Thermal EMF vs Copper
420	70	40	0	-0.014

### 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	201 Brinell / 92 R <sub>B</sub>

### Typical Physical Properties at Room Temperature

Density	7.90 g/cu cm	0.286 lb/cu in.
Modulus of elasticity in tension	29 x 10 psi	200 GPa
Melting Point	1399°C	2550°F

### Coefficient of Linear Thermal Expansion

Temp. Range		10 / °F (10 / °C)
°F	°C	
68 - 212	20 - 100	9.2 (16.6)
18 - 1600	20 - 870	11.0 (19.8)

### Thermal Conductivity

Temp. Range		W/m·K	Btu/hr·ft <sup>2</sup> ·°F
°F	°C		
212	100	16.3	9.4
932	500	21.4	12.4

### Specific Heat

32 - 212°F	0 - 100°C	0.12 Btu/lb·°F	500 Jkg·K
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\*To be used as a guideline only.