

# HM Wire International, Inc.

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

www.litz-wire.com info@litz-wire.com www.hmwire.com



## Alloy 314 Stainless Steel

**Description:** Alloy 314 has the best high-temperature resistance capabilities of any chromium-nickel steels. Silicon improves oxidation and carburization resistance, but may make it more brittle when subjected to lengthy temperatures of 1200° to 1500° F. Commonly known as Chromium-Nickel Steel.

Nominal Composition:	Cr	Ni	Mn	Si	C	P	S
	23 - 26	19 - 22	2	1.5 - 3	0.25	0.05	0.030

### Mechanical Properties

Properties		T (°C)	Conditions
Density	7.8	25	
Poisson's Ratio	0.27 - 0.30	25	
Elastic Modulus (GPa)	200	25	
Tensile Strength (Mpa)	515	25	hot finished and annealed wire
Yield Strength (Mpa)	205		
Elongation (%)	40		
Reduction in Area (%)	50		

### Physical Properties

Properties		T (°C)	Conditions
Electrical Resistivity ( $10^{-9}\Omega\cdot m$ )	770	25	
Melting Range	1400 - 1450°C		

### Thermal Properties

Properties		T (°C)	Conditions
Thermal Expansion ( $10^{-6}/^{\circ}C$ )	15.1	0 - 315	
Thermal Conductivity (W/m-K)	17.5	100	
Specific Heat (J/kg-K)	500	0 - 100	

\*To be used as a guideline only.

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