



HSM Wire International, Inc

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Alloy 205 - Nickel Alloy

Description: Nickel Alloy 205 is a wrought nickel alloy having controlled additions of small amounts of magnesium and titanium. Alloy 205 exhibits an excellent combination of mechanical, electrical and corrosion-resistant properties. It also has good oxidation resistance.

Applications: Nickel Alloy 205 has been used in various electronic components such as vacuum tube components, pins, terminals, support wires, lead wires, shields, and tubes.

Nominal Composition:	C%	S%	Cu%	Mg%	Fe%	Mn%	Si%
	0.07	0.008	0.15	0.01 - 0.08	0.20	0.35	0.15
	Ti%	Ni% + Co%					
	0.01 - 0.05	99.00					

Physical Properties

Specific Gravity	8.89
Density	0.3210 lb/cu in
Mean Specific Heat	0.1080 Btu/lb/°F
Mean CTE - 77 to 212°F	7.22×10^{-6} in/in/°F
Thermal Conductivity - 73°F	306.0 BTU-in/hr/ft ² /°F
Modulus of Elasticity - In Tension	30.0×10^3 ksi
Electrical Resistivity - 70°F	57.00 ohm-cir-mil/ft
Temp. Coeff. Of Electrical Resistance	22.2 to 27.8×10^{-4} Ohm/Ohm/°F
Curie Temperature	680°F
Melting Range	2620°F

Mechanical Properties

Condition	Ultimate Tensile Strength	Yield Strength	% Elongation in 2"
	ksi	ksi	
Rod			
Cold Drawn	90	72	20
Cold Drawn & Annealed	70	30	45
Wire			
Cold Drawn & Annealed	70	32	40
Regular Temper	122	118	10
Spring Temper	135	120	8
Strip			
Annealed	65	25	35
Cold Rolled	110	95	5

*To be used as a guideline only.