



Alumel®*

Alumel is the negative leg of the widely known Chromel/Alumel Thermocouple. Originally developed in 1906, this thermocouple has been globally accepted as the most useful base-metal thermocouple combination. With the standard alloys, or one of several special alloy combinations, it is widely used over a temperature range of -200 °C to +1260 °C. The superior resistance of the alloys to oxidation allows the use of the bare metals throughout the useful range. With proper protection it can be used in almost any environment.

Industry Specifications: ASTM E-230; UNS N02016

Nominal Composition: 95 Ni, 2 Mn, 2 Si, 1 Al

Typical Physical Property Data

Thermocouple Type (ANSI designation)	KN	
Recommended Extension Wire	N.A.	
Approximate Melting Point	2550°F	
	(1399°C)	
Specific Gravity	8.60	
Density (lb./in ³)	.3107	
(g/cm ³)	8.60	
Nominal Resistivity (Ω•mil ² /ft.)	177	(at 20 °C)
(μΩ/cm ³)	29.4	(at 20 °C)
Temp. Coef. Of Resistance (Ω/Ω/°C) E-4	18.8	(20 to 100 °C)
Temp. Coef. Of Expansion (cm/cm/°C) E-6	12.0	(20 to 100 °C)
Thermal Cond. (W/cm ² /cm/°C)	0.297	(at 100 °C)
Magnetic Response	Mag.	(at 20 °C)

Typical Mechanical Properties:

Tensile Strength, annealed (ksi)	85
Yield Strength, annealed (ksi)	40
Elongation, annealed (%)	35

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