

Thermocouple Characteristics Table

ANSI/ ASTM	Symbol Single	Generic Names	<i>Color</i> / <i>Coding</i>		Magnetic Yes/No	Environment (Bare Wire)
			Individual Conductor	Overall Jacket Extension Grade Wire		
T	TP TN	Copper Constantan, Nominal Composition: 55% Cu, 45% Ni	• Blue • Red	• Blue	X X	Mild Oxidizing, Reducing. Vacuum or Inert. Good where moisture is present.
J	JP JN	Iron Constantan, Nominal Composition: 55% Cu, 45% Ni.	• White • Red	• Black	X X	Reducing Vacuum, Inert. Limited use in oxidizing at High Temperatures. Not recommended for low temps.
E	EP EN	Chromel®, Nominal Composition: 90% Ni, 10% Cr Constantan, Nominal Composition: 55% Cu, 45% Ni	• Purple • Red	• Purple	X X	Oxidizing or Inert. Limited use in Vacuum or Reducing.
K	KP KN	Chromel, Nominal Composition: 90% Ni, 10% Cr Alumel, Nominal Composition: 95% Ni, Mn, 2% Al	• Yellow • Red	• Yellow	X X	Clean Oxidizing and Inert. Limited used in Vacuum or Reducing.
N	NP NN	Nicrosil®, Nominal Compositions: 84.6% Ni, 14.2% Cr, 1.4% Si Nisil®, Nominal Composition: 95.5% Ni, 4.4% Si, 1% Mg	• Orange • Red	• Orange	X X	Clean Oxidizing and Inert. Limited use in Vacuum or Reducing.
S	SP SN	Platinum 10% Rhodium Pure Platinum	• Black • Red	• Green	X X	Oxidizing or Inert Atmospheres. Do not insert in metal tubes. Beware of contamination.
R	RP RN	Platinum 13% Rhodium Pure Platinum	• Black • Red	• Green	X X	Oxidizing or Inert Atmospheres. Do not insert in metal tubes. Beware of contamination.
B	BP BN	Platinum 30% Rhodium Platinum 6% Rhodium	• Grey • Red	• Grey	X X	Oxidizing or Inert Atmospheres. Do not insert in metal tubes. Beware of contamination.
W5* (C)	P N	Tungsten 5% Rhenium Tungsten 26% Rhenium	• White/Red Trace • Red	• White/Red Trace	X X	Vacuum, Inert, Hydrogen Atmospheres. Beware of Embrittlement.
W3* (D)	P N	Tungsten 3% Rhenium Tungsten 25% Rhenium	• White/Yellow Trace • Red	• White/ Yellow Trace	X X	Vacuum, Inert, Hydrogen Atmospheres. Beware of Embrittlement.

*Conax designated, not ANSI/ASTM. ©Chromel-Alumel is a registered trademark of Hoskins Manufacturing. ©Nicrosil and Nisil are registered trademarks of Harrison Alloys, Inc.



2300 Walden Avenue • Buffalo, New York 14225