

NOMINAL PHYSICAL PROPERTIES OF ELEMENT

SECTION 1

Thermoelement Material

Property	Positive (+) Conductors						Negative (-) Conductors			
	J	T	K,E	N+	R	S	J,T,E	K	R,S	N-
Melting Point (°C)	1535	1083	1430	1410	1870	1850	1210	1400	1773	1400
Electrical Resistivity Ohms/CMF @ 20°C	60.14	10.37	425	.560			294	177	63.80	.220
Thermal Conductivity Watts/cm/°C @ 100°C	.662	3.88	.192	.031			.212	.297	.695	.055
Specific Heat Cal./GM/°C @ 20°C	.1065	.0921	.107	0.11			.094	.125	.0324	0.12
Density-lb/in ³	.2840	.3233	.3154				.322	.3107	.7750	
Tensile Strength Annealed-PSI	50,000	35,000	95,000	110,00			60,000	85,000		95,000
Magnetic Strength @ 20°C	Strong	None	None	None	None	None	None	Weak	None	None
Specific Gravity	7.86	8.92	8.73	.852			8.9	8.60	21.45	.870

TABLE 1. Characteristics Compositions of Thermoelement Alloys.

Alloy	CHEMICAL composition (weight %)									
	Cr	Si	Mg	Mn	Al	Fe	Co	C	Cu	Ni
nicrosil	14.2	1.4	-	-	-	0.1	-	.03	-	bal.
nisil	-	4.4	0.1	-	-	0.1	-	-	-	bal.
type (or EP)	9.3	0.5	-	0.5	-	0.5	0.5	-	-	bal.
type KN	-	1.1	-	2.8	1.9	0.5	0.5	-	0.5	bal.
type JP	-	-	-	.25	-	bal.	-	-	.12	-
type JN	-	-	-	.75	-	0.3	0.3	-	bal.	44.5
type TP	-	-	-	-	-	-	-	-	99.95	-
type TN (or EN)	-	-	-	0.1	-	0.1	-	-	bal.	45

