

# THERMOCOUPLE ROLL CERTIFICATE - TYPE K

## CERTIFICATE

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P. O. No. : 004062  
 Reference No. : TN3955  
 Description : 120-2M-DK  
 Specification : IEC 584-2 Class2

Date : 27-Nov-03  
 Job No. : JC31735  
 Length : 5.250 Meters  
 Coil : 34.0 Coils

SS 304L COIL

### Material Certificate

Tube		
Control No.	PD088	
Vender Code	J.S	
Description	ASTM A312 310S TP	
Tensile Strength	596	N/mm <sup>2</sup>
Yield Strength	283	N/mm <sup>2</sup>
% Elongation	52	%
Heat No.	DOC1103	
C	≤0.08	%
Si	≤0.75	%
Mn	≤2.00	%
P	≤0.045	%
S	≤0.030	%
Ni	19.00-22.00	%
Cr	24.00-26.00	%
Mo	≤0.75	%
Co		%
Ti		%
Cu		%
Fe		%
Al		%
N		%
Nb		%

Element		
Control No.	KP112	KN053
Vender Code	J.H	J.H
Description	Chromel	Alumel
Heat No.	2258-2	515-3
Ni	Bal	Bal %
Cr	8.98	%
Fe	0.48	%
Mn		1.41 %
Si	0.44	1.81 %
C		%
Al		0.72 %
Cu		%

Insulation		
Control No.	MG044	
Vender Code	A.M	
MgO	98.46	%
CaO	0.89	%
SiO2	0.37	%
Al2O3	0.12	%
Fe2O3	0.16	%
B		ppm

### Inspection Certificate

Thickness(Min) : 0.40 mm  
 Thickness(Max) : 0.41 mm  
 Voltage Test : 500 V x 1min  
 Note :

Room Temp : 26°C  
 Humidity : 62 %  
 Insulation Resist: 1.000 MΩ up  
 Weight : 207.7 kgs

Serial No.	Length (m)	Weight (kg)	Element Dia(mm)	Outer Dia(mm)	Resist (Ω/m)	300°C	500°C	700°C			
						±2.50°C	±3.75°C	±5.25°C			
1	156	5.90	0.47	3.00	5.66	1.51	1.46	0.32			
2	156	6.15	0.48	3.00	5.88	0.95	0.80	-0.17			
3	156	6.15	0.47	3.00	5.86	1.19	0.77	-0.10			
4	156	6.15	0.48	3.00	5.74	0.58	0.84	-0.04			
5	156	6.10	0.47	3.00	5.87	1.05	1.25	0.17			
6	155	6.10	0.47	3.00	5.87	0.80	0.63	-0.15			
7	155	6.15	0.46	3.00	6.00	0.82	0.66	-0.11			
8	155	6.15	0.47	3.00	5.90	1.05	0.35	-0.58			
9	153	6.05	0.46	3.00	5.88	1.33	1.20	0.44			
10	153	6.05	0.46	3.00	5.89	1.12	0.56	-0.24			
11	154	6.10	0.47	3.00	5.90	0.39	0.79	-0.10			
12	154	6.10	0.48	3.00	5.87	0.61	0.93	-0.02			
13	153	6.10	0.48	3.00	5.94	0.45	1.10	0.30			
14	153	6.10	0.47	3.00	5.93	1.07	1.31	0.32			
15	155	6.10	0.48	3.00	5.86	0.89	1.18	0.15			
16	152	6.15	0.48	3.00	6.01	1.20	1.80	0.64			

OKAZAKI MANUFACTURING COMPANY