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## Alloy 750 Resistance Heating

<b>ASTM:</b> B603	<b>UNS:</b> K91670
<b>Ω/cir. mil. ft.:</b> 750	<b>Weight/Density:</b> .264 lbs/in <sup>2</sup> (7.3 g/cm <sup>3</sup> )
<b>Chemical Composition %:</b> Cr 14-16%, Al 3.75-4.75%, Mg .6%, C .08%, Si .5%, Fe - Balance	
<b>Coeff. of Lin. Expansion, X 10<sup>-6</sup>:</b> 11 (250°C), 12 (500°C), 14 (750°C), 15 (1,000°C)	
<b>Conductivity:</b> 21 w/mK	<b>Specific Heat:</b> .110 cal./gm @ 20°C
<b>Temp. Coeff. of Resistance:</b> .00009	<b>Specific Gravity:</b> 7.3
<b>Melting Point:</b> ~1,510°C (~2,750°F)	<b>Elongation:</b> 15-30%
<b>Max Operating Temp:</b> ~1,040°C (~1,900°F)	<b>Yield Point:</b> 60,000-80,000 PSI
<b>Soft Tensile:</b> 75,000-105,000 PSI	

Diameter			Resistance @ 68° F/20° C Ω/ft	Sq. in./Ω 68°F	Weight Lb./1000 ft	Ω/lb.	Ft/Lb.	Cross sectional area (in <sup>2</sup> )
B&S	Inches	Mm						
13	0.072	1.83	0.145	18.76	12.9	11.2	77.56	0.00407
14	0.064	1.63	0.183	13.18	10.2	17.9	98.03	0.00322
15	0.057	1.45	0.231	9.309	8.11	28.5	123.3	0.00256
16	0.051	1.29	0.288	6.668	6.43	44.8	155.5	0.00203
17	0.045	1.15	0.370	4.580	5.10	72.6	196.1	0.00161
18	0.04	1.02	0.469	3.217	3.99	117.4	250.5	0.00126
19	0.036	0.912	0.579	2.345	3.23	179.1	309.5	0.00102
20	0.032	0.812	0.732	1.647	2.55	287.6	392.6	0.000804
21	0.0285	0.723	0.923	1.164	2.02	456.9	494.8	0.000638
22	0.0253	0.644	1.172	0.814	1.59	735.9	627.9	0.000507
23	0.0226	0.573	1.468	0.580	1.27	1,155	786.9	0.000401
24	0.0201	0.51	1.856	0.408	1.01	1,846	994.8	0.000314
25	0.0179	0.455	2.341	0.288	0.797	2,936	1,254	0.000254
26	0.0159	0.405	2.967	0.202	0.629	4,718	1,590	0.000199
27	0.0142	0.361	3.719	0.144	0.502	7,412	1,993	0.000158
28	0.0126	0.321	4.724	0.101	0.395	11,961	2,532	0.000125
29	0.0113	0.286	5.874	0.073	0.318	18,491	3,148	0.000100
30	0.01	0.255	7.500	0.050	0.249	30,143	4,019	0.0000785
31	0.0089	0.227	9.469	0.035	0.197	48,046	5,074	0.0000626
32	0.008	0.202	11.72	0.026	0.159	73,602	6,280	0.0000496
33	0.0071	0.18	14.88	0.018	0.125	118,638	7,973	0.0000394
34	0.0063	0.16	18.90	0.013	0.099	191,457	10,130	0.0000312
35	0.0056	0.143	23.92	0.009	0.0780	306,654	12,820	0.0000247
36	0.005	0.127	30.00	0.0063	0.0622	482,400	16,080	0.0000196
37	0.0045	0.113	37.04	0.0046	0.0504	735,244	19,850	0.0000152
38	0.004	0.101	46.88	0.0032	0.0398	1,177,626	25,120	0.0000126
39	0.0035	0.09	61.22	0.0022	0.0305	2,008,628	32,810	0.00000979
40	0.0031	0.08	78.04	0.0015	0.0239	3,263,788	41,820	0.00000779
41	0.00275	0.07	99.17	0.0010	0.0195	5,081,945	51,243	0.00000616
42	0.0025	0.063	120.00	0.00079	0.0154	7,777,985	64,817	0.00000487
43	0.00225	0.057	148.15	0.00057	0.0120	12,306,299	83,068	0.00000380
44	0.0020	0.051	187.50	0.00040	0.0099	18,848,919	100,528	0.00000314
45	0.00175	0.044	244.90	0.00027	0.0077	31,812,201	129,900	0.00000243
46	0.0015	0.038	333.33	0.00017	0.0064	52,347,689	157,043	0.00000201
47	0.0014	0.036	382.65	0.00014	0.0049	78,433,085	204,972	0.00000154
48	0.0013	0.033	443.79	0.00011	0.0038	115,772,128	260,873	0.00000121