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Alloy 675 Resistance Heating

ASTM:	DIN: 17470/17471	UNS: N06004
Ω/cir. mil. ft.: 675	Weight/Density: .299 lbs/in ² (8.2 g/cm ³)	
Chemical Composition %: Ni 57% min, Cr 14-18%, Mn 1% max, C .02% max, Fe - Balance		
Coeff. of Lin. Expansion, X 10⁻⁶: 14.0(200°C), 15.0(500°C), 15.5(600°C), 16.0(800°C), 17.0(1,000°C)		
Conductivity: 13 w/mK	Specific Heat: .110 cal./gm @ 20°C	
Temp. Coeff. of Resistance: 0.000014	Specific Gravity: 8.25	
Melting Point: ~1,390°C (~2,535°F)	Elongation: 20-40%	
Max Operating Temp: ~1,150°C (~2,100°F)	Yield Point: 40,000-60,000	
Soft Tensile: 95,000-125,000 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 ²)
B&S	Inches	Mm						
13	.072	1.83	0.130	20.84	14.6	8.94	68.68	0.00407
14	.064	1.63	0.165	14.67	11.5	14.3	86.96	0.00322
15	0.057	1.45	0.208	10.36	9.13	22.8	109.6	0.00256
16	0.051	1.29	0.260	7.380	7.23	35.5	136.9	0.00203
17	0.045	1.15	0.333	5.125	5.74	58.6	175.9	0.00161
18	0.04	1.02	0.422	3.600	4.47	93.9	222.6	0.00126
19	0.036	.912	0.521	2.598	3.62	143.1	274.8	0.00102
20	0.032	0.812	0.659	1.829	2.87	229.3	347.8	0.000804
21	0.0285	0.723	0.831	1.292	2.28	364.3	438.4	0.000638
22	0.0253	0.644	1.055	0.904	1.80	587.1	556.5	0.000507
23	0.0226	0.573	1.322	0.645	1.43	921.9	697.4	0.000401
24	0.0201	0.51	1.671	0.454	1.12	1,473	881.8	0.000314
25	0.0179	0.455	2.107	0.320	0.907	2,341	1,111	0.000254
26	0.0159	0.405	2.670	0.225	0.708	3,773	1,413	0.000199
27	0.0142	0.361	3.348	0.160	0.564	5,913	1,766	0.000158
28	0.0126	0.321	4.251	0.112	0.445	9,535	2,243	0.000125
29	0.0113	0.286	5.286	0.081	0.357	17,740	2,789	0.000100
30	0.01	0.255	6.750	0.056	0.280	24,040	3,561	0.0000785
31	0.0089	0.227	8.523	0.039	0.223	38,320	4,496	0.0000626
32	0.008	0.202	10.55	0.029	0.177	58,710	5,565	0.0000496
33	0.0071	0.18	13.39	0.020	0.141	94,560	7,062	0.0000394
34	0.0063	0.16	17.00	0.014	0.111	152,600	8,977	0.0000312
35	0.0056	0.143	21.52	0.010	0.0881	244,500	11,360	0.0000247
36	0.005	0.127	27.00	0.0070	0.0700	384,800	14,250	0.0000196
37	0.0045	0.113	33.33	0.0051	0.0542	586,300	17,590	0.0000152
38	0.004	0.101	42.19	0.0036	0.0447	939,100	22,260	0.0000126
39	0.0035	0.09	55.10	0.0024	0.0348	1,602,000	29,070	0.00000979
40	0.0031	0.08	70.24	0.0017	0.0278	2,603,000	37,060	0.00000779
41	0.00275	0.07	89.29	0.0012	0.0220	4,204,000	47,080	0.00000616
42	0.0025	0.063	108.00	0.00087	0.0173	6,154,000	56,980	0.00000487
43	0.00225	0.057	133.40	0.00064	0.0136	9,381,000	70,320	0.00000380
44	0.002	0.051	168.80	0.00045	0.0112	15,030,000	89,050	0.00000314
45	0.00175	0.044	220.60	0.00030	0.0087	25,656,000	116,300	0.00000243
46	0.0015	0.038	300.00	0.00019	0.0072	47,490,000	158,300	0.00000201
47	0.0014	0.036	344.40	0.00015	0.0055	62,580,000	181,700	0.00000154
48	0.0013	0.033	399.50	0.00012	0.0043	84,150,000	210,700	0.00000121