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Alloy 600 Resistance Heating

ASTM: B344 & B267

Ω /cir. mil. ft.: 610

Chemical Composition %: Ni 34-37%, Cr 18-21%, C .15%, Si 1-3%, Mn 1%, S .1%, Fe - Balance

Coeff. of Lin. Expansion, X 10⁻⁶: 16 (250°C), 17 (500°C), 18 (750°C), 19 (1,000°C)

Conductivity: 13 w/mK

Temp. Coeff. of Resistance: .0004

Melting Point: ~1,390°C (~2,535°F)

Max Operating Temp: ~1,000°C (~2,012°F)

Soft Tensile: 80,000-120,000 PSI

UNS:

Weight/Density: .287 lbs/in² (7.9 g/cm³)

Specific Heat: .119 cal./gm @ 20°C

Specific Gravity: 7.95

Elongation: 20-40%

Yield Point: 30,000-50,000 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	0.072	1.83	0.117	23.46	14.0	8.36	71.28	0.00407
14	0.064	1.63	0.149	16.50	11.0	13.4	90.17	0.00322
15	0.057	1.45	0.191	11.66	8.76	21.7	113.7	0.00256
16	0.051	1.29	0.235	8.301	6.94	33.3	142.0	0.00203
17	0.045	1.15	0.305	5.764	5.51	55.6	182.4	0.00161
18	0.04	1.02	0.381	4.051	4.29	88.0	230.9	0.00126
19	0.036	0.912	0.469	2.922	3.48	133.8	285.1	0.00102
20	0.032	0.812	0.610	2.058	2.76	220.1	360.8	0.000804
21	0.0285	0.723	0.753	1.454	2.19	342.5	454.8	0.000638
22	0.0253	0.644	0.953	1.017	1.73	549.9	577.0	0.000507
23	0.0226	0.573	1.196	0.725	1.37	864.8	723.1	0.000401
24	0.0201	0.51	1.525	0.510	1.07	1,394	914.1	0.000314
25	0.0179	0.455	1.906	0.360	0.870	2,198	1,153	0.000254
26	0.0159	0.405	2.440	0.253	0.679	3,565	1,461	0.000199
27	0.0142	0.361	3.050	0.180	0.542	5,600	1,836	0.000158
28	0.0126	0.321	3.836	0.126	0.427	8,934	2,329	0.000125
29	0.0113	0.286	4.766	0.091	0.343	13,800	2,895	0.000100
30	0.01	0.255	6.100	0.063	0.269	22,530	3,694	0.0000785
31	0.0089	0.227	7.721	0.044	0.214	36,010	4,664	0.0000626
32	0.008	0.202	9.531	0.032	0.170	55,030	5,774	0.0000496
33	0.0071	0.18	12.20	0.023	0.135	89,450	7,332	0.0000394
34	0.0063	0.16	15.25	0.016	0.106	142,000	9,311	0.0000312
35	0.0056	0.143	19.67	0.011	0.0846	231,500	11,770	0.0000247
36	0.005	0.127	24.40	0.0079	0.0672	360,600	14,780	0.0000196
37	0.0045	0.113	30.50	0.0057	0.0520	556,600	18,250	0.0000152
38	0.004	0.101	38.12	0.0040	0.0429	880,200	23,090	0.0000126
39	0.0035	0.09	50.83	0.0027	0.0334	1,684,000	30,160	0.00000979
40	0.0031	0.08	63.48	0.0019	0.0267	2,441,000	38,450	0.00000779
41	0.00275	0.07	81.33	0.0013	0.0211	3,973,000	48,850	0.00000616
42	0.0025	0.063	97.60	0.00096	0.0166	5,769,000	59,110	0.00000487
43	0.00225	0.057	119.60	0.00071	0.0130	8,728,000	72,980	0.00000380
44	0.0020	0.051	152.50	0.00049	0.0107	14,080,000	92,360	0.00000314
45	0.00175	0.044	199.20	0.00033	0.0083	24,020,000	120,600	0.00000243
46	0.0015	0.038	271.10	0.00021	0.0069	44,510,000	164,200	0.00000201
47	0.0014	0.036	311.20	0.00018	0.0053	58,660,000	188,500	0.00000154
48	0.0013	0.033	360.90	0.00014	0.0041	78,890,000	218,600	0.00000121