

ALLOY 400 PRECISION RESISTANCE

MONEL

ASTM: B164	DIN: 17753	UNS: N04400
Ω /cir. mil. ft.: 310	Weight/Density: .318 lbs/in ² (8.8 g/cm ³)	
Chemical Composition %: Ni 63%, C .05% max, Cu 28-34%, Fe 1-2%, Mn 1.25%, S .01%, Si .5%, Al .3%		
Coeff. of Lin. Expansion, X 10 ⁻⁶ : 15.5 (200°C), 16.0 (400°C), 16.6 (600°C), 17.4 (800°C)		
Conductivity: 21 w/mK	Specific Heat: .103 cal./gm @ 20°C	
Temp. Coeff. of Resistance: .00010	Specific Gravity: 8.84	
Melting Point: ~1,350°C (~2,462°F)	Elongation: 15-30%	
Max Operating Temp: ~550°C (~1,022°F)	Yield Point: 25,000-45,000 PSI	
Soft Tensile: 65,000-85,000 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	0.060	45.39	15.5	3.85	64.39	0.00407
14	0.064	1.63	0.076	31.88	12.3	6.16	81.38	0.00322
15	0.057	1.45	0.095	22.52	9.77	9.77	102.4	0.00256
16	0.051	1.29	0.119	16.13	7.75	15.39	129.1	0.00203
17	0.045	1.15	0.153	11.08	6.14	24.92	162.8	0.00161
18	0.04	1.02	0.194	7.783	4.81	40.30	208.0	0.00126
19	0.036	0.912	0.239	5.674	3.89	61.45	256.9	0.00102
20	0.032	0.812	0.303	3.985	3.07	98.67	325.9	0.000804
21	0.0285	0.723	0.382	2.815	2.43	156.8	410.7	0.000638
22	0.0253	0.644	0.484	1.969	1.93	250.3	516.9	0.000507
23	0.0226	0.573	0.607	1.404	1.53	396.6	653.5	0.000401
24	0.0201	0.51	0.767	0.988	1.20	640.4	834.6	0.000314
25	0.0179	0.455	0.968	0.697	0.969	998.2	1,032	0.000254
26	0.0159	0.405	1.226	0.489	0.759	1,615	1,317	0.000199
27	0.0142	0.361	1.537	0.348	0.603	2,550	1,659	0.000158
28	0.0126	0.321	1.953	0.243	0.477	4,094	2,096	0.000125
29	0.0113	0.286	2.428	0.175	0.382	6,362	2,621	0.000100
30	0.01	0.255	3.100	0.122	0.300	10,349	3,338	0.0000785
31	0.0089	0.227	3.914	0.086	0.239	16,383	4,186	0.0000626
32	0.008	0.202	4.844	0.062	0.189	25,591	5,283	0.0000496
33	0.0071	0.18	6.150	0.044	0.150	40,902	6,651	0.0000394
34	0.0063	0.16	7.811	0.030	0.119	65,602	8,399	0.0000312
35	0.0056	0.143	9.885	0.021	0.0943	104,877	10,609	0.0000247
36	0.005	0.127	12.40	0.0152	0.0748	165,790	13,370	0.0000196
37	0.0045	0.113	15.31	0.0111	0.0580	263,928	17,240	0.0000152
38	0.004	0.101	19.38	0.0078	0.0481	402,961	20,798	0.0000126
39	0.0035	0.09	25.31	0.0052	0.0374	677,383	26,768	0.00000979
40	0.0031	0.08	32.26	0.0036	0.0297	1,085,157	33,640	0.00000779
41	0.00275	0.07	40.99	0.0025	0.0235	1,743,842	42,541	0.00000616
42	0.0025	0.063	49.60	0.00190	0.0186	2,668,974	53,810	0.00000487
43	0.00225	0.057	61.23	0.00139	0.0145	4,222,841	68,962	0.00000380
44	0.0020	0.051	77.50	0.00097	0.0120	6,467,906	83,457	0.00000314
45	0.00175	0.044	101.22	0.00065	0.0093	10,916,187	107,841	0.00000243
46	0.0015	0.038	137.78	0.00041	0.0077	17,962,830	130,375	0.00000201
47	0.0014	0.036	158.16	0.00033	0.0059	26,913,894	170,165	0.00000154
48	0.0013	0.033	183.43	0.00027	0.0046	39,726,587	216,574	0.00000121