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## 4706 Nickel Iron Alloys (Glass Sealing)

<b>ASTM:</b>	<b>DIN:</b> 17745
<b>Ω/cir. mil. ft.:</b> 550	<b>Weight/Density:</b> .292 lbs/in <sup>2</sup> (8.1 g/cm <sup>3</sup> )
<b>Chemical Composition %:</b> Ni 46-48%, C .020% max, Cr 5.5-6.5%, Mn .3%, Si .3%, Fe - Bal	
<b>Coeff. of Lin. Expansion, X 10<sup>-6</sup>:</b> 9.7 (100°C), 9.3 (200°C), 9.2 (300°C), 10.0 (400°C), 11.6 (500°C)	
<b>Conductivity:</b> 14 w/mK	<b>Specific Heat:</b> .119 cal./gm @ 20°C
<b>Temp. Coeff. of Resistance:</b>	<b>Specific Gravity:</b> 8.10
<b>Melting Point:</b> ~1,450°C (~2,640°F)	<b>Elongation:</b> 20-40%
<b>Max Operating Temp:</b>	<b>Yield Point:</b> 20,000-40,000
<b>Soft Tensile:</b> 62,000-82,000 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	0.106	25.58	14.3	7.44	70.12	0.00407
14	0.064	1.63	0.134	17.97	11.3	11.90	88.63	0.00322
15	0.057	1.45	0.169	12.69	8.97	18.87	111.5	0.00256
16	0.051	1.29	0.211	9.092	7.11	29.73	140.6	0.00203
17	0.045	1.15	0.272	6.246	5.64	48.14	177.3	0.00161
18	0.04	1.02	0.344	4.387	4.42	77.86	226.5	0.00126
19	0.036	0.912	0.424	3.198	3.57	118.7	279.8	0.00102
20	0.032	0.812	0.537	2.246	2.82	190.7	355.0	0.000804
21	0.0285	0.723	0.677	1.587	2.24	302.9	447.3	0.000638
22	0.0253	0.644	0.859	1.110	1.78	483.7	562.9	0.000507
23	0.0226	0.573	1.077	0.791	1.41	766.4	711.7	0.000401
24	0.0201	0.51	1.361	0.557	1.10	1,237	908.9	0.000314
25	0.0179	0.455	1.717	0.393	0.890	1,929	1,124	0.000254
26	0.0159	0.405	2.176	0.276	0.697	3,120	1,434	0.000199
27	0.0142	0.361	2.728	0.196	0.554	4,927	1,806	0.000158
28	0.0126	0.321	3.464	0.137	0.438	7,909	2,283	0.000125
29	0.0113	0.286	4.307	0.099	0.350	12,293	2,854	0.000100
30	0.01	0.255	5.500	0.069	0.275	19,995	3,636	0.0000785
31	0.0089	0.227	6.944	0.048	0.219	31,655	4,559	0.0000626
32	0.008	0.202	8.594	0.035	0.174	49,447	5,754	0.0000496
33	0.0071	0.18	10.91	0.025	0.138	79,029	7,243	0.0000394
34	0.0063	0.16	13.86	0.017	0.109	126,754	9,147	0.0000312
35	0.0056	0.143	17.54	0.012	0.0865	202,640	11,554	0.0000247
36	0.005	0.127	22.00	0.0086	0.0687	320,334	14,561	0.0000196
37	0.0045	0.113	27.16	0.0062	0.0533	509,953	18,776	0.0000152
38	0.004	0.101	34.38	0.0044	0.0442	778,589	22,650	0.0000126
39	0.0035	0.09	44.90	0.0029	0.0343	1,308,820	29,151	0.00000979
40	0.0031	0.08	57.23	0.0020	0.0273	2,096,707	36,635	0.00000779
41	0.00275	0.07	72.73	0.0014	0.0216	3,369,399	46,329	0.00000616
42	0.0025	0.063	88.00	0.00107	0.0171	5,156,911	58,601	0.00000487
43	0.00225	0.057	108.64	0.00078	0.0133	8,159,245	75,102	0.00000380
44	0.0020	0.051	137.50	0.00055	0.0110	12,497,092	90,888	0.00000314
45	0.00175	0.044	179.59	0.00037	0.0085	21,091,925	117,444	0.00000243
46	0.0015	0.038	244.44	0.00023	0.0070	34,707,235	141,984	0.00000201
47	0.0014	0.036	280.61	0.00019	0.0054	52,002,210	185,317	0.00000154
48	0.0013	0.033	325.44	0.00015	0.0042	76,758,507	235,858	0.00000121