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Alloy 120 Precision Resistance

| | |
|---|--|
| ASTM: B 267 | UNS: |
| Ω/cir. mil. ft.: 120 | Weight/Density: .305 lbs/in ² (8.4 g/cm ³) |
| Chemical Composition %: Ni 70%, Fe 30% | Conductivity: 29 w/mK |
| Temp. Coeff. of Resistance: 0.0045 | Specific Gravity: 8.46 |
| Coeff. of Lin. Expansion, X 10⁻⁶: 15 (20-100°C) | Specific Heat: .125 cal./gm @ 20°C |
| Melting Point: ~1,425°C (~2,600°F) | Elongation: 15-30% |
| Max Operating Temp: ~590°C (~1,095°F) | Yield Point: 40,000-60,000 PSI |
| Soft Tensile: 70,000-100,000 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 | 0.024 | 111.0 | 14.9 | 1.63 | 67.13 | 0.00407 |
| 14 | 0.064 | 1.63 | 0.031 | 78.80 | 11.8 | 2.60 | 84.85 | 0.00322 |
| 15 | 0.057 | 1.45 | 0.039 | 55.70 | 9.37 | 4.12 | 106.7 | 0.00256 |
| 16 | 0.051 | 1.29 | 0.049 | 39.20 | 7.43 | 6.57 | 134.6 | 0.00203 |
| 17 | 0.045 | 1.15 | 0.061 | 27.80 | 5.89 | 10.42 | 169.7 | 0.00161 |
| 18 | 0.04 | 1.02 | 0.078 | 19.60 | 4.61 | 16.83 | 216.8 | 0.00126 |
| 19 | 0.036 | 0.912 | 0.098 | 13.80 | 3.73 | 26.20 | 267.9 | 0.00102 |
| 20 | 0.032 | 0.812 | 0.1171 | 9.800 | 2.94 | 39.78 | 339.7 | 0.000804 |
| 21 | 0.0285 | 0.723 | 0.1477 | 6.930 | 2.317 | 63.75 | 431.6 | 0.000638 |
| 22 | 0.0253 | 0.644 | .1860 | 4.850 | 1.825 | 101.9 | 547.9 | 0.000507 |
| 23 | 0.0226 | 0.573 | .2350 | 3.450 | 1.468 | 160.1 | 681.2 | 0.000401 |
| 24 | 0.0201 | 0.51 | .2970 | 2.430 | 1.15 | 258.3 | 869.6 | 0.000314 |
| 25 | 0.0179 | 0.455 | .3746 | 1.720 | .9201 | 396.3 | 1,087 | 0.000254 |
| 26 | 0.0159 | 0.405 | .4746 | 1.200 | .7262 | 653.5 | 1,377 | 0.000199 |
| 27 | 0.0142 | 0.361 | .5952 | 0.857 | .5797 | 1,027 | 1,725 | 0.000158 |
| 28 | 0.0126 | 0.321 | .7556 | 0.599 | .4585 | 1,648 | 2,181 | 0.000125 |
| 29 | 0.0113 | 0.286 | .9389 | 0.432 | .3606 | 2,606 | 2,773 | 0.000100 |
| 30 | 0.01 | 0.255 | 1.200 | 0.299 | .2873 | 4,177 | 3,481 | 0.0000785 |
| 31 | 0.0089 | 0.227 | 1.515 | 0.211 | .2276 | 6,657 | 4,394 | 0.0000626 |
| 32 | 0.008 | 0.202 | 1.875 | 0.153 | .1839 | 10,200 | 5,438 | 0.0000496 |
| 33 | 0.0071 | 0.18 | 2.38 | 0.107 | .1448 | 16,440 | 6,906 | 0.0000394 |
| 34 | 0.0063 | 0.16 | 3.022 | 0.075 | .114 | 26,510 | 8,772 | 0.0000312 |
| 35 | 0.0056 | 0.143 | 3.826 | 0.053 | .09011 | 42,090 | 11,000 | 0.0000247 |
| 36 | 0.005 | 0.127 | 4.80 | 0.0374 | .07184 | 66,820 | 13,920 | 0.0000196 |
| 37 | 0.0045 | 0.113 | 5.926 | 0.0273 | .02816 | 101,900 | 17,190 | 0.0000152 |
| 38 | 0.004 | 0.101 | 7.5 | 0.0206 | .04598 | 163,100 | 21,750 | 0.0000126 |
| 39 | 0.0035 | 0.09 | 9.796 | 0.0138 | .03517 | 278,500 | 28,430 | 0.00000979 |
| 40 | 0.0031 | 0.08 | 12.49 | 0.0096 | .027580 | 452,900 | 36,260 | 0.00000779 |
| 41 | 0.00275 | 0.07 | 15.86 | 0.0067 | .021720 | 730,342 | 46,029 | 0.00000616 |
| 42 | 0.0025 | 0.063 | 19.2 | 0.00503 | .01795 | 1,069,363 | 55,696 | 0.00000487 |
| 43 | 0.00225 | 0.057 | 23.70 | 0.00367 | .01454 | 1,629,612 | 68,760 | 0.00000380 |
| 44 | 0.0020 | 0.051 | 30.00 | 0.00258 | .01149 | 2,610,750 | 87,025 | 0.00000314 |
| 45 | 0.00175 | 0.044 | 38.69 | 0.00176 | .0089 | 4,347,191 | 112,360 | 0.00000243 |
| 46 | 0.0015 | 0.038 | 53.33 | 0.00109 | .0074 | 7,206,757 | 135,135 | 0.00000201 |
| 47 | 0.0014 | 0.036 | 61.22 | 0.00088 | .0056 | 10,932,143 | 178,571 | 0.00000154 |
| 48 | 0.0013 | 0.033 | 71.01 | 0.00071 | .0044 | 16,138,636 | 227,273 | 0.00000121 |