



HSM Wire International, Inc

Ph: 330-244-8501 Fax: 330-244-8561

www.hsmwire.com

Resistance Alloy Technical Data - Resistivity, Tensile Strength, Density & Melting Point

| Material | Chemical Composition (%) | Resistivity @ 20°C | | Tensile Strength (KPSI @ 20°C) | | Density Lbs/Cubic Inch | Magnetic Attraction | Approx. Melting Point (°C) |
|----------------------------|---|--------------------|---------------|--------------------------------|------|------------------------|---------------------|----------------------------|
| | | Ohms/CMF | TCR 0 - 100°C | Min. | Max. | | | |
| Alloy 875 | 22.5 Cr, 5.5 Al, 0.5 Si, 0.1 C, bal. Fe | 875 | 0.00002 | 105 | 175 | 0.256 | Strong | 1520 |
| Alloy 800 | 75 Ni, 20 Cr, 2.5 Al, 2.5 Cu | 800 | 0.00002 | 100 | 200 | 0.293 | None | 1350 |
| NiCr C | 61 Ni, 15 Cr, bal. Fe | 675 | 0.00013 | 95 | 175 | 0.2979 | Faint | 1350 |
| NiCr A | 80 Ni, 20 Cr | 650 | 0.0001 | 100 | 200 | 0.3039 | None | 1400 |
| Stainless Steel 304 | 18 Cr, 8 Ni, bal. Fe | 438 | 0.00017 | 100 | 300 | 0.286 | None (Annealed) | 1399 |
| Alloy 294 | 55 Cu, 45 Ni | 294 | 0.00004* | 60 | 135 | 0.321 | None | 1210 |
| Ni Co Fe 294 | 29 Ni, 17 Co, bal. Fe | 294 | 0.0033 | 65 | 150 | 0.302 | Strong | 1450 |
| Manganin | 13 Mn, 4 Ni, bal. Cu | 290 | 0.000015† | 40 | 90 | 0.286 | None | 1020 |
| Monel 400 | 70 Ni, 30 Cu | 290 | 0.0001 | 70 | 150 | 0.321 | Faint | 1350 |
| Alloy 52 | 50 Ni, bal. Fe | 260 | 0.0029 | 70 | 150 | 0.301 | Strong | 1425 |
| Alloy 180 | 22 Ni, bal. Cu | 180 | 0.00018 | 50 | 100 | 0.321 | None | 1100 |
| Alloy 120 | 70 Ni, bal. Fe | 120 | 0.0045 | 70 | 150 | 0.305 | Strong | 1425 |

*To be used as a guideline only.



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|-------------------|--------------------------|--------------------|---------------|--------------------------------|------|------------------------|---------------------|----------------------------|
| | | Ohms/CMF | TRC 0 - 100°C | Min. | Max. | | | |
| Alloy 90 | 12 Ni, bal. Cu | 90 | 0.0004 | 35 | 75 | 0.321 | None | 1100 |
| Alloy 60 | 6 Ni, bal Cu | 60 | 0.0005 | 35 | 70 | 0.321 | None | 1100 |
| Alloy 30 | 2 Ni, bal. Cu | 30 | 0.0013 | 30 | 60 | 0.321 | None | 1100 |
| Nickel 205 | 99.5 Ni | 57 | 0.0048 | 60 | 135 | 0.321 | Strong | 1450 |
| Nickel 270 | 99.98 Ni | 45 | 0.0067 | 48 | 95 | 0.321 | Strong | 1452 |

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* TCR @ 25 - 105°C

┘ TCR @ 15 - 35°C