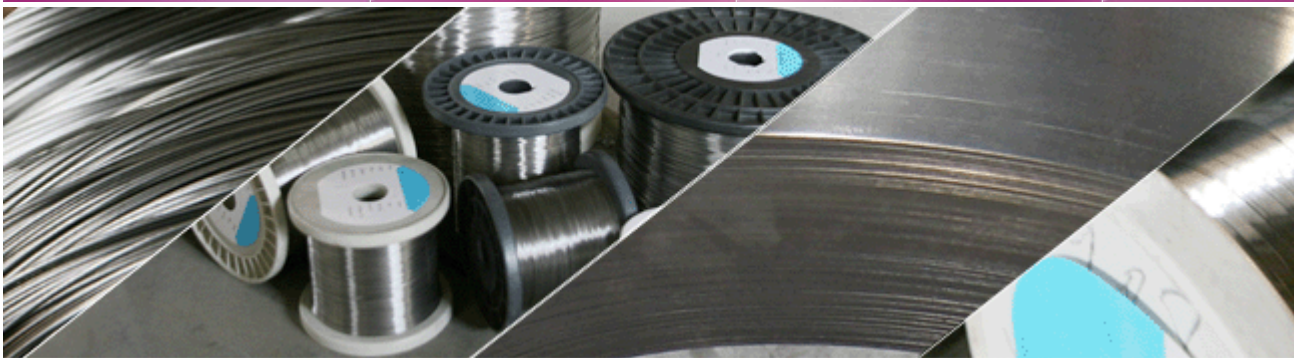




# Danyang East Wire Plant

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## Product parameter table

### PRODUCT --> Nichrome alloy wires

▪ Nichrome alloy wires

▪ Fe-Cr-Al alloy wires

▪ Resistance strips

▪ Thermocouple alloy wires

▪ Thermocouple extension wires

▪ Precision resistance alloy wires

▪ Copper-based alloy wires

▪ Appendix (1)

▪ Appendix (2)

### Main characteristics of Nichrome electrical wires

| Alloy Nomenclature<br>Performance                       | Cr20Ni80 |             | Cr30Ni70    |  |
|---------------------------------------------------------|----------|-------------|-------------|--|
|                                                         | Ni       | Rest        | Rest        |  |
| Main Chemical composition                               | Cr       | 20.0-23.0   | 28.0-31.0   |  |
|                                                         | Fe       | ≤1.0        | ≤1.0        |  |
| Max. continuous service temp. of element                |          | 1200        | 1250        |  |
| Resistivity at 20°C (μΩ.m)                              |          | 1.09        | 1.18        |  |
| Density (g/cm <sup>3</sup> )                            |          | 8.40        | 8.10        |  |
| Thermal conductivity(KJ/m.h.°C)                         |          | 60.3        | 45.2        |  |
| Coefficient of lines expansion (α×10 <sup>-6</sup> /°C) |          | 18.0        | 17.0        |  |
| Melting point (approx.)( °C)                            |          | 1400        | 1380        |  |
| Elongation rate (%)                                     |          | >20         | >20         |  |
| Micrographic structure                                  |          | austenite   | austenite   |  |
| Magnetic properties                                     |          | nonmagnetic | nonmagnetic |  |

### Nichrome alloys with the diameters and c

| Dia.<br>(mm) | Cross sectional<br>area(mm <sup>2</sup> ) | Resistance per<br>meter (20°C Ω/m) | Cr20Ni80                |                           |
|--------------|-------------------------------------------|------------------------------------|-------------------------|---------------------------|
|              |                                           |                                    | Length per kg<br>(m/kg) | Weight per<br>Meter(kg/m) |
| 0.10         | 0.007854                                  | 138.8                              | 15158.405               | 0.00006597                |
| 0.12         | 0.01131                                   | 96.38                              | 10526.316               | 0.000095                  |
| 0.15         | 0.01767                                   | 61.68                              | 6738.544                | 0.0001484                 |
| 0.17         | 0.0227                                    | 48.02                              | 5243.838                | 0.0001907                 |
| 0.19         | 0.02835                                   | 38.44                              | 4198.153                | 0.0002382                 |
| 0.21         | 0.03464                                   | 31.47                              | 3437.607                | 0.0002909                 |
| 0.25         | 0.04909                                   | 22.21                              | 2425.418                | 0.0004123                 |
| 0.27         | 0.05726                                   | 19.04                              | 2079.434                | 0.0004809                 |
| 0.29         | 0.06605                                   | 16.5                               | 1802.451                | 0.0005548                 |
| 0.31         | 0.07548                                   | 14.44                              | 1577.287                | 0.000634                  |
| 0.35         | 0.09621                                   | 11.33                              | 1237.317                | 0.0008082                 |
| 0.40         | 0.1257                                    | 8.674                              | 946.970                 | 0.001056                  |
| 0.45         | 0.159                                     | 6.853                              | 748.503                 | 0.001336                  |
| 0.50         | 0.1963                                    | 5.551                              | 606.428                 | 0.001649                  |
| 0.60         | 0.2827                                    | 3.855                              | 421.053                 | 0.002375                  |
| 0.70         | 0.3848                                    | 2.832                              | 309.310                 | 0.003233                  |
| 0.80         | 0.5027                                    | 2.168                              | 236.855                 | 0.004222                  |
| 0.90         | 0.6362                                    | 1.713                              | 187.126                 | 0.005344                  |

|      |        |         |         |          |
|------|--------|---------|---------|----------|
| 1.00 | 0.7854 | 1.388   | 151.584 | 0.006597 |
| 1.20 | 1.131  | 0.9638  | 105.263 | 0.0095   |
| 1.40 | 1.539  | 0.7081  | 77.340  | 0.01293  |
| 1.60 | 2.011  | 0.5421  | 59.207  | 0.01689  |
| 1.80 | 2.545  | 0.4283  | 46.773  | 0.02138  |
| 2.00 | 3.142  | 0.347   | 37.893  | 0.02639  |
| 2.20 | 3.801  | 0.2867  | 31.319  | 0.03193  |
| 2.25 | 3.976  | 0.2741  | 29.940  | 0.0334   |
| 2.80 | 6.158  | 0.177   | 19.335  | 0.05172  |
| 3.00 | 7.069  | 0.1542  | 16.841  | 0.05938  |
| 3.50 | 9.621  | 0.1133  | 12.373  | 0.08082  |
| 4.00 | 12.57  | 0.08674 | 9.470   | 0.1056   |
| 4.50 | 15.9   | 0.06853 | 7.485   | 0.1336   |
| 5.00 | 19.63  | 0.05551 | 6.064   | 0.1649   |
| 5.50 | 23.76  | 0.04588 | 5.010   | 0.1996   |
| 6.00 | 28.27  | 0.03855 | 4.211   | 0.2375   |
| 6.50 | 33.18  | 0.03285 | 3.588   | 0.2787   |
| 7.00 | 38.48  | 0.02832 | 3.093   | 0.3233   |

## Nichrome alloys with the diameters and c

| Dia.(mm) | Cross sectional area(mm <sup>2</sup> ) | Cr15Ni60                        |                      |                  |
|----------|----------------------------------------|---------------------------------|----------------------|------------------|
|          |                                        | Resistance per meter (20°C Ω/m) | Length per kg (m/kg) | Weight Meter(kg) |
| 0.10     | 0.007854                               | 142.6                           | 15527.950            | 0.0000           |
| 0.12     | 0.01131                                | 99.03                           | 10782.834            | 0.00009          |
| 0.15     | 0.01767                                | 63.38                           | 6901.311             | 0.0001           |
| 0.17     | 0.0227                                 | 49.34                           | 5373.455             | 0.0001           |
| 0.19     | 0.02835                                | 39.5                            | 4301.075             | 0.0002           |
| 0.21     | 0.03464                                | 32.34                           | 3521.127             | 0.0002           |
| 0.25     | 0.04909                                | 22.82                           | 2484.472             | 0.0004           |
| 0.27     | 0.05726                                | 19.56                           | 2129.925             | 0.0004           |
| 0.29     | 0.06605                                | 16.96                           | 1846.381             | 0.0005           |
| 0.31     | 0.07548                                | 14.84                           | 1615.770             | 0.0006           |
| 0.35     | 0.09621                                | 11.64                           | 1267.588             | 0.0007           |
| 0.40     | 0.1257                                 | 8.913                           | 970.874              | 0.001            |
| 0.45     | 0.159                                  | 7.042                           | 766.871              | 0.0013           |
| 0.50     | 0.1963                                 | 5.704                           | 621.118              | 0.001            |
| 0.60     | 0.2827                                 | 3.961                           | 431.406              | 0.0023           |
| 0.70     | 0.3848                                 | 2.91                            | 316.857              | 0.0031           |
| 0.80     | 0.5027                                 | 2.228                           | 242.601              | 0.0041           |
| 0.90     | 0.6362                                 | 1.761                           | 191.681              | 0.0052           |
| 1.00     | 0.7854                                 | 1.426                           | 155.280              | 0.006            |
| 1.20     | 1.131                                  | 0.9903                          | 107.828              | 0.0092           |
| 1.40     | 1.539                                  | 0.7276                          | 79.239               | 0.012            |
| 1.60     | 2.011                                  | 0.557                           | 60.643               | 0.016            |
| 1.80     | 2.545                                  | 0.4401                          | 47.916               | 0.020            |
| 2.00     | 3.142                                  | 0.3565                          | 38.820               | 0.025            |
| 2.20     | 3.801                                  | 0.2946                          | 32.082               | 0.031            |
| 2.25     | 3.976                                  | 0.2817                          | 30.675               | 0.032            |
| 2.80     | 6.158                                  | 0.1819                          | 19.806               | 0.050            |
| 3.00     | 7.069                                  | 0.1584                          | 17.253               | 0.057            |
| 3.50     | 9.621                                  | 0.1164                          | 12.676               | 0.078            |
| 4.00     | 12.57                                  | 0.08913                         | 9.709                | 0.10             |
| 4.50     | 15.9                                   | 0.07042                         | 7.669                | 0.130            |
| 5.00     | 19.63                                  | 0.05704                         | 6.211                | 0.16             |
| 5.50     | 23.76                                  | 0.04714                         | 5.133                | 0.194            |
| 6.00     | 28.27                                  | 0.03961                         | 4.314                | 0.231            |
| 6.50     | 33.18                                  | 0.03375                         | 3.675                | 0.272            |
| 7.00     | 38.48                                  | 0.0291                          | 3.169                | 0.315            |