# Nickel Spooled Wire

Nickel spooled wire (99–99.99% purity) in multiple tempers. Used for heating elements, springs, battery electrodes and magnetic components. **SKU:** 1000000275-group
**Product Code:** NI00-WR-000170

## Material Properties for Metals

### Atomic Properties

| Element | Value |
|---|---|
| Atomic number | 28 |
| Crystal structure | Face centred cubic |
| Electronic structure | Ar 3d? $4s^2$ |
| Valences shown | 0, 1, 2, 3 |
| Atomic weight( amu ) | 58.69 |
| Thermal neutron absorption cross-section( Barns ) | 4.54 |
| Photo-electric work function( eV ) | 4.9 |
| Natural isotope distribution( Mass No./% ) | 60/ 26.10 |
| Natural isotope distribution( Mass No./% ) | 62/ 3.59 |
| Natural isotope distribution( Mass No./% ) | 61/ 1.13 |
| Natural isotope distribution( Mass No./% ) | 58/ 68.27 |
| Natural isotope distribution( Mass No./% ) | 64/ 0.91 |
| Atomic radius - Goldschmidt( nm ) | 0.125 |
| Ionisation potential( No./eV ) | 2/ 18.2 |
| Ionisation potential( No./eV ) | 4/ 54.9 |
| Ionisation potential( No./eV ) | 6/ 108 |
| Ionisation potential( No./eV ) | 1/ 7.63 |
| Ionisation potential( No./eV ) | 3/ 35.2 |
| Ionisation potential( No./eV ) | 5/ 75.5 |

### Mechanical Properties

| Element | Value |
|---|---|
| Hardness - Brinell | 190 |
| Hardness - Brinell | 100 |
| Material condition | Hard |

| Element | Value |
|---|---|
| Material condition | Soft |
| Poisson's ratio | 0.312 |
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| Bulk modulus( GPa ) | 177.3 |
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| Tensile modulus( GPa ) | 199.5 |
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| Izod toughness( J m?¹ ) | 160 |
| Izod toughness( J m?¹ ) | 160 |
| Tensile strength( MPa ) | 400 |
| Tensile strength( MPa ) | 660 |
| Yield strength( MPa ) | 150 |
| Yield strength( MPa ) | 480 |

## Electrical Properties

| Element | Value |
|---|---|
| Electrical resistivity( µOhmcm ) | 6.9@20°C |
| Temperature coefficient( K?¹ ) | 0.0068@0-100°C |
| Thermal emf against Pt (cold 0C - hot 100C)( mV ) | -1.48 |

## Physical Properties

| Element | Value |
|---|---|
| Boiling point( C ) | 2732 |
| Density( gcm?³ ) | 8.9@20 |
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## Thermal Properties

| Element | Value |
|---|---|
| Melting point( C ) | 1453 |
| Latent heat of evaporation( J g?¹ ) | 6378 |
| Latent heat of fusion( J g?¹ ) | 292 |
| Specific heat( J K?¹ kg?¹ ) | 444@25°C |
| Thermal conductivity( W m?¹ K?¹ ) | 90.9@0-100°C |
| Coefficient of thermal expansion( x10?? K?¹ ) | 13.3@0-100°C |