

# Palladium Spooled Wire

**Formula:** Pd

**Percentage Purity:** 99.95%

**Product Shape:** Spooled

**Diameter:** 0.5mm

**Length:** 0.2m

**Temper:** As Drawn

**CAS Number:** 7440-05-3

**UOM Code:** 021-763-32

**SKU:** 1000002608-group

**Product Code:** PD00-WR-000146

## Material Properties for Precious Metals

### Atomic Properties

Element	Value
Atomic number	46
Crystal structure	Face centred cubic
Electronic structure	Kr 4d <sup>10</sup>
Valences shown	2, 3, 4
Atomic weight( amu )	106.42
Thermal neutron absorption cross-section( Barns )	6
Photo-electric work function( eV )	5
Natural isotope distribution( Mass No./% )	108/ 26.7
Natural isotope distribution( Mass No./% )	110/ 11.8
Natural isotope distribution( Mass No./% )	104/ 11.0
Natural isotope distribution( Mass No./% )	102/ 1.0
Natural isotope distribution( Mass No./% )	105/ 22.2
Natural isotope distribution( Mass No./% )	106/ 27.3
Atomic radius - Goldschmidt( nm )	0.137
Ionisation potential( No./eV )	1/ 8.3
Ionisation potential( No./eV )	2/ 19.4
Ionisation potential( No./eV )	3/ 32.9

### Mechanical Properties

<b>Element</b>	<b>Value</b>
Material condition	Soft
Material condition	Hard
Poisson's ratio	0.39
Poisson's ratio	0.39
Bulk modulus( GPa )	187
Bulk modulus( GPa )	187
Tensile modulus( GPa )	121
Tensile modulus( GPa )	121
Hardness - Vickers( kgf mm <sup>2</sup> )	40
Hardness - Vickers( kgf mm <sup>2</sup> )	100
Tensile strength( MPa )	140-195
Tensile strength( MPa )	325
Yield strength( MPa )	205
Yield strength( MPa )	34.5

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	10.8@20@20
Temperature coefficient( K <sup>-1</sup> )	0.0042@0-100
Thermal emf against Pt (cold 0C - hot 100C)( mV )	-0.57

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	3140
Density( gcm <sup>3</sup> )	12@20°C

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	1554
Latent heat of evaporation( J g <sup>-1</sup> )	3398
Latent heat of fusion( J g <sup>-1</sup> )	157
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	244@25
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	71.8@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	11@0-100