

# Platinum Straight Wire

**Formula:** Pt

**Percentage Purity:** 99.99%

**Product Shape:** Straight Wire

**Diameter:** 0.635mm

**Length:** 0.2m

**Temper:** As Drawn

**CAS Number:** 7440-06-4

**UOM Code:** 053-579-54

**SKU:** 1000007571-group

**Product Code:** PT00-WR-000248

## Material Properties for Precious Metals

### Atomic Properties

Element	Value
Atomic number	78
Crystal structure	Face centred cubic
Electronic structure	Xe 4f <sup>14</sup> 5d <sup>9</sup> 6s <sup>1</sup>
Valences shown	1,2,3,4
Atomic weight( amu )	195.08
Thermal neutron absorption cross-section( Barns )	9
Photo-electric work function( eV )	5.3
Natural isotope distribution( Mass No./% )	192/ 0.79
Natural isotope distribution( Mass No./% )	196/ 25.30
Natural isotope distribution( Mass No./% )	190/ 0.01
Natural isotope distribution( Mass No./% )	195/ 33.80
Natural isotope distribution( Mass No./% )	198/ 7.20
Natural isotope distribution( Mass No./% )	194/ 32.90
Atomic radius - Goldschmidt( nm )	0.138
Ionisation potential( No./eV )	1/ 9.0
Ionisation potential( No./eV )	2/ 18.6

### Mechanical Properties

Element	Value
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Material condition	Hard
Material condition	Soft
Poisson's ratio	0.39
Poisson's ratio	0.39
Bulk modulus( GPa )	276
Bulk modulus( GPa )	276
Tensile modulus( GPa )	170
Tensile modulus( GPa )	170
Hardness - Vickers( kgf mm <sup>2</sup> )	40
Hardness - Vickers( kgf mm <sup>2</sup> )	100
Tensile strength( MPa )	200-300
Tensile strength( MPa )	125-150
Yield strength( MPa )	14-35
Yield strength( MPa )	185

## Electrical Properties

Element	Value
Electrical resistivity( $\mu\text{Ohmcm}$ )	10.58@20@20°C
Temperature coefficient( $\text{K}^{-1}$ )	0.00392@0-100°C

## Physical Properties

Element	Value
Boiling point( C )	3827
Density( $\text{gcm}^{-3}$ )	21.45@20°C

## Thermal Properties

Element	Value
Melting point( C )	1772
Latent heat of evaporation( $\text{J g}^{-1}$ )	2405
Latent heat of fusion( $\text{J g}^{-1}$ )	101
Specific heat( $\text{J K}^{-1} \text{kg}^{-1}$ )	133@025°C
Thermal conductivity( $\text{W m}^{-1} \text{K}^{-1}$ )	71.6@0-100°C
Coefficient of thermal expansion( $\times 10^{-6} \text{K}^{-1}$ )	9@0-100