Platinum Ultrafine Wire

Platinum ultrafine wire offers conductivity, catalytic stability, and corrosion resistance for electrochemical sensors, medical implants, microelectrodes, fuel?cell studies, and high?temperature micro?devices. **SKU:** 1000034542-group
Product Code: PT00-WR-000272

Material Properties for Precious Metals

Atomic Properties

Element	Value
Atomic number	78
Crystal structure	Face centred cubic
Electronic structure	Xe $4f^{1}$? 5d? $6s^{1}$
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
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.39
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Bulk modulus(GPa)	276

Element	Value
Bulk modulus(GPa)	276
Tensile modulus(GPa)	170
Tensile modulus(GPa)	170
Hardness - Vickers(kgf mm?²)	40
Hardness - Vickers(kgf mm?²)	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(µOhmcm)	10.58@20°C
Temperature coefficient(K?¹)	0.00392@0-100°C

Physical Properties

Element	Value
Boiling point(C)	3827
Density(gcm?³)	21.45@20°C

Thermal Properties

Element	Value
Melting point(C)	1772
Latent heat of evaporation(J g?¹)	2405
Latent heat of fusion(J g?¹)	101
Specific heat(J K?¹ kg?¹)	133@025°C
Thermal conductivity(W m?¹ K?¹)	71.6@0-100°C
Coefficient of thermal expansion(x10?? K?¹)	9@0-100