

# Silver Rod

**Formula:** Ag

**Percentage Purity:** 99.95%

**Diameter:** 1mm

**Length:** 500mm

**Temper:** As Drawn

**CAS Number:** 7440-22-4

**UOM Code:** 000-493-51

**SKU:** 1000000091-group

**Product Code:** AG00-RD-000102

## Material Properties for Precious Metals

### Atomic Properties

Element	Value
Atomic number	47
Crystal structure	Face centred cubic
Electronic structure	Kr 4d <sup>10</sup> 5s <sup>1</sup>
Valences shown	1-2,2
Atomic weight( amu )	107.8682
Thermal neutron absorption cross-section( Barns )	63.8
Photo-electric work function( eV )	4.7
Natural isotope distribution( Mass No./% )	107/ 51.83
Natural isotope distribution( Mass No./% )	109/ 48.17
Atomic radius - Goldschmidt( nm )	0.144
Ionisation potential( No./eV )	2/ 21.5
Ionisation potential( No./eV )	1/ 7.58
Ionisation potential( No./eV )	3/ 34.8

### Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.367
Poisson's ratio	0.367

<b>Element</b>	<b>Value</b>
Bulk modulus( GPa )	103.6
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Tensile modulus( GPa )	82.7
Tensile modulus( GPa )	82.7
Izod toughness( J m <sup>-1</sup> )	5
Hardness - Vickers( kgf mm <sup>-2</sup> )	95
Hardness - Vickers( kgf mm <sup>-2</sup> )	25
Tensile strength( MPa )	330
Tensile strength( MPa )	172

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	1.63@20@20°C
Temperature coefficient( K <sup>-1</sup> )	0.0041@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)( mV )	0.74

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	2212
Density( gcm <sup>-3</sup> )	10.5@20°C

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	961.9
Latent heat of evaporation( J g <sup>-1</sup> )	2390
Latent heat of fusion( J g <sup>-1</sup> )	103
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	237@25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	429@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	19.1@0-100°C