

# Ruthenium Bar

**Formula:** Ru

**Percentage Purity:** 99.9%

**Side Length:** 2mm

**Side Length (Of Longer Side):** 2mm

**Length:** 25mm

**CAS Number:** 7440-18-8

**UOM Code:** 835-251-93

**SKU:** 1000179867-group

**Product Code:** RU00-BR-000110

## Material Properties for Precious Metals

### Atomic Properties

Element	Value
Atomic number	44
Crystal structure	Hexagonal close packed
Electronic structure	Kr 4d <sup>7</sup> 5s <sup>1</sup>
Valences shown	0,1,2,3,4,5,6,7,8
Atomic weight( amu )	101.07
Thermal neutron absorption cross-section( Barns )	3
Photo-electric work function( eV )	4.71
Natural isotope distribution( Mass No./% )	99/ 12.7
Natural isotope distribution( Mass No./% )	96/ 5.5
Natural isotope distribution( Mass No./% )	104/ 18.6
Natural isotope distribution( Mass No./% )	98/ 1.9
Natural isotope distribution( Mass No./% )	101/ 17.1
Natural isotope distribution( Mass No./% )	100/ 12.6
Natural isotope distribution( Mass No./% )	102/ 31.6
Atomic radius - Goldschmidt( nm )	0.134
Ionisation potential( No./eV )	2/ 16.8
Ionisation potential( No./eV )	3/ 28.5
Ionisation potential( No./eV )	1/ 7.36

### Mechanical Properties

<b>Element</b>	<b>Value</b>
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.25
Poisson's ratio	0.25
Bulk modulus( GPa )	286
Bulk modulus( GPa )	286
Tensile modulus( GPa )	432
Tensile modulus( GPa )	432
Hardness - Vickers( kgf mm <sup>2</sup> )	750
Hardness - Vickers( kgf mm <sup>2</sup> )	350
Tensile strength( MPa )	495
Yield strength( MPa )	372

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	7.7@20@20°C
Superconductivity critical temperature( K )	0.49
Temperature coefficient( K <sup>-1</sup> )	0.0041@0-100

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	3900
Density( gcm <sup>3</sup> )	12.2@20

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	2310
Latent heat of evaporation( J g <sup>-1</sup> )	5610
Latent heat of fusion( J g <sup>-1</sup> )	252
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	238@20°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	117@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	9.6@0-100°C