

# Vanadium Rod

**Formula:** V

**Percentage Purity:** 99.8%

**Diameter:** 1.2mm

**Length:** 100mm

**CAS Number:** 7440-62-2

**UOM Code:** 014-531-60

**SKU:** 1000001844-group

**Product Code:** V-00-RD-000101

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	23
Crystal structure	Body centred cubic
Electronic structure	Ar 3d <sup>3</sup> 4s <sup>2</sup>
Valences shown	2,3,4,5
Atomic weight( amu )	50.9415
Thermal neutron absorption cross-section( Barns )	5.06
Photo-electric work function( eV )	4.3
Natural isotope distribution( Mass No./% )	51/ 99.75
Natural isotope distribution( Mass No./% )	50/ 0.25
Atomic radius - Goldschmidt( nm )	0.136
Ionisation potential( No./eV )	3/ 29.3
Ionisation potential( No./eV )	2/ 14.6
Ionisation potential( No./eV )	5/ 65.2
Ionisation potential( No./eV )	6/ 128
Ionisation potential( No./eV )	1/ 6.74
Ionisation potential( No./eV )	4/ 46.7

### Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft

<b>Element</b>	<b>Value</b>
Poisson's ratio	0.365
Poisson's ratio	0.365
Bulk modulus( GPa )	158
Bulk modulus( GPa )	158
Tensile modulus( GPa )	127.6
Tensile modulus( GPa )	127.6
Izod toughness( J m <sup>-1</sup> )	10-136
Hardness - Vickers( kgf mm <sup>-2</sup> )	80
Hardness - Vickers( kgf mm <sup>-2</sup> )	150
Tensile strength( MPa )	260-585
Tensile strength( MPa )	530-730
Yield strength( MPa )	170-450
Yield strength( MPa )	515-690

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	19.6@20@20°C
Superconductivity critical temperature( K )	5.4
Temperature coefficient( K <sup>-1</sup> )	0.0039@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)( mV )	0.63

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	3380
Density( gcm <sup>-3</sup> )	6.1@20°C

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	1890
Latent heat of evaporation( J g <sup>-1</sup> )	8975
Latent heat of fusion( J g <sup>-1</sup> )	345
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	486@25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	30.7@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	8.3@0-100°C