

# Rhodium Powder

**Formula:** Rh

**Percentage Purity:** 99.9%

**Maximum Particle Size:** 45µm

**Weight:** 1g

**CAS Number:** 7440-16-6

**UOM Code:** 621-572-69

**SKU:** 1000179726-group

**Product Code:** RH00-PD-000115

## Material Properties for Precious Metals

### Atomic Properties

| Element   | Value                              |
|---|------------------------------------|
| Atomic number                                     | 45                                 |
| Crystal structure                                 | Face centred cubic                 |
| Electronic structure                              | Kr 4d <sup>7</sup> 5s <sup>1</sup> |
| Valences shown                                    | 2,3,4,5,6                          |
| Atomic weight( amu )                              | 102.9055                           |
| Thermal neutron absorption cross-section( Barns ) | 150                                |
| Photo-electric work function( eV )                | 4.6                                |
| Atomic radius - Goldschmidt( nm )                 | 0.134                              |
| Ionisation potential( No./eV )                    | 1/ 7.46                            |
| Ionisation potential( No./eV )                    | 3/ 31.1                            |
| Ionisation potential( No./eV )                    | 2/ 18.1                            |

### Mechanical Properties

| Element                | Value |
|------------------------|-------|
| Material condition     | Hard  |
| Material condition     | Soft  |
| Poisson's ratio        | 0.26  |
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| Bulk modulus( GPa )    | 276   |
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| Tensile modulus( GPa ) | 379   |

| <b>Element</b>                            | <b>Value</b> |
|---|--------------|
| Tensile modulus( GPa )                    | 379          |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 300          |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 120          |
| Tensile strength( MPa )                   | 1380-2070    |
| Tensile strength( MPa )                   | 690-760      |
| Yield strength( MPa )                     | 69-275       |

## **Electrical Properties**

| <b>Element</b>                                    | <b>Value</b>   |
|---|----------------|
| Electrical resistivity( $\mu\text{Ohmcm}$ )       | 4.7@20@20°C    |
| Temperature coefficient( K <sup>-1</sup> )        | 0.0044@0-100°C |
| Thermal emf against Pt (cold 0C - hot 100C)( mV ) | 0.7            |

## **Physical Properties**

| <b>Element</b>              | <b>Value</b> |
|-----------------------------|--------------|
| Boiling point( C )          | 3727         |
| Density( gcm <sup>3</sup> ) | 12.4@20°C    |

## **Thermal Properties**

| <b>Element</b>   | <b>Value</b> |
|--|--------------|
| Melting point( C )   | 1965         |
| Latent heat of evaporation( J g <sup>-1</sup> )                      | 4800         |
| Latent heat of fusion( J g <sup>-1</sup> )                           | 210          |
| Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )                  | 244@25°C     |
| Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )            | 150@0-100°C  |
| Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> ) | 8.5@0-100°C  |