

# Rhodium Thin Film Disk

**Formula:** Rh

**Percentage Purity:** 99.99%

**Thickness:** 0.5 $\mu$ m

**Diameter:** 35mm

**Area Density:** 620 $\mu$ g/cm<sup>2</sup>

**Support:** Permanent Mylar® 3.5 $\mu$ m

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

**UOM Code:** 140-546-39

**SKU:** 1000043560-group

**Product Code:** RH00-MF-000300

## Material Properties for Precious Metals

### Atomic Properties

Element	Value
Atomic number	45
Crystal structure	Face centred cubic
Electronic structure	Kr 4d <sup>9</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

<b>Element</b>	<b>Value</b>
Bulk modulus( GPa )	276
Tensile modulus( GPa )	379
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