

# Bismuth Disk Single Crystal

**Formula:** Bi  
**Percentage Purity:** 99.999%  
**Thickness:** 1.5mm  
**Diameter:** 12mm  
**Orientation:** -111  
**Orientation Accuracy:** = 1°  
**Polish:** Polished  
**Surface Finish:** = 0.03µm Ra  
**CAS Number:** 7440-69-9  
**UOM Code:** 128-248-27  
**SKU:** 1000036376-group  
**Product Code:** BI00-SC-000144

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	83
Crystal structure	Rhombohedral
Electronic structure	Xe 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>3</sup>
Valences shown	3, 5
Atomic weight( amu )	208.9804
Thermal neutron absorption cross-section( Barns )	0.034
Photo-electric work function( eV )	4.4
Atomic radius - Goldschmidt( nm )	0.182
Ionisation potential( No./eV )	5/ 56.0
Ionisation potential( No./eV )	1/ 7.29
Ionisation potential( No./eV )	3/ 25.6
Ionisation potential( No./eV )	4/ 45.3
Ionisation potential( No./eV )	6/ 88.3
Ionisation potential( No./eV )	2/ 16.7

### Mechanical Properties

Element	Value
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Material condition	Polycrystalline
Poisson's ratio	0.33
Bulk modulus( GPa )	31.3
Tensile modulus( GPa )	34
Hardness - Vickers( kgf mm <sup>2</sup> )	16-19

## Electrical Properties

Element	Value
Electrical resistivity( $\mu\text{Ohmcm}$ )	117@20@20°C
Temperature coefficient( K <sup>-1</sup> )	0.0046@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)( mV )	-7.34

## Physical Properties

Element	Value
Boiling point( C )	1560
Density( gcm <sup>3</sup> )	9.8@20°C

## Thermal Properties

Element	Value
Melting point( C )	271.3
Latent heat of evaporation( J g <sup>-1</sup> )	857
Latent heat of fusion( J g <sup>-1</sup> )	52
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	124@25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	7.9@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	13.4@0-100°C