

# Gadolinium Powder

**Formula:** Gd

**Percentage Purity:** 99.9%

**Maximum Particle Size:** 500µm

**Weight:** 10g

**CAS Number:** 7440-54-2

**UOM Code:** 701-933-69

**SKU:** 1000116846-group

**Product Code:** GD00-PD-000110

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	64
Crystal structure	Hexagonal close packed
Electronic structure	Xe 4f <sup>7</sup> 5d <sup>1</sup> 6s <sup>2</sup>
Valences shown	3
Atomic weight( amu )	157.25
Thermal neutron absorption cross-section( Barns )	49000
Photo-electric work function( eV )	3.1
Natural isotope distribution( Mass No./% )	160/ 21.8
Natural isotope distribution( Mass No./% )	155/ 14.8
Natural isotope distribution( Mass No./% )	157/ 15.7
Natural isotope distribution( Mass No./% )	152/ 0.2
Natural isotope distribution( Mass No./% )	158/ 24.8
Natural isotope distribution( Mass No./% )	156/ 20.5
Natural isotope distribution( Mass No./% )	154/ 2.2
Atomic radius - Goldschmidt( nm )	0.18
Ionisation potential( No./eV )	2/ 12.1
Ionisation potential( No./eV )	1/ 6.14

### Mechanical Properties

Element	Value
Material condition	Polycrystalline

<b>Element</b>	<b>Value</b>
Poisson's ratio	0.26
Bulk modulus( GPa )	39.1
Tensile modulus( GPa )	56.2
Hardness - Vickers( kgf mm <sup>2</sup> )	55
Tensile strength( MPa )	193
Yield strength( MPa )	179

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	134@20@20°C
Temperature coefficient( K <sup>-1</sup> )	0.00176@0-100°C

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	3266
Density( gcm <sup>3</sup> )	7.895@25°C

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	1313
Latent heat of evaporation( J g <sup>-1</sup> )	1920
Latent heat of fusion( J g <sup>-1</sup> )	98.7
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	230@25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	10.5@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	6.4@0-100°C