

# Erbium Powder

**Formula:** Er

**Percentage Purity:** 99.9%

**Maximum Particle Size:** 500µm

**Weight:** 10g

**CAS Number:** 7440-52-0

**UOM Code:** 227-933-73

**SKU:** 1000077170-group

**Product Code:** ER00-PD-000110

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	68
Crystal structure	Hexagonal close packed
Electronic structure	Xe 4f <sup>12</sup> 6s <sup>2</sup>
Valences shown	3
Atomic weight( amu )	167.26
Thermal neutron absorption cross-section( Barns )	160
Natural isotope distribution( Mass No./% )	166/ 33.4
Natural isotope distribution( Mass No./% )	162/ 0.1
Natural isotope distribution( Mass No./% )	168/ 27.0
Natural isotope distribution( Mass No./% )	170/ 15.0
Natural isotope distribution( Mass No./% )	167/ 22.9
Natural isotope distribution( Mass No./% )	164/ 1.6
Atomic radius - Goldschmidt( nm )	0.175
Ionisation potential( No./eV )	2/ 11.93
Ionisation potential( No./eV )	1/ 6.10

### Mechanical Properties

Element	Value
Material condition	Polycrystalline
Poisson's ratio	0.207
Bulk modulus( GPa )	41.8

Element	Value
Tensile modulus( GPa )	73.3
Hardness - Vickers( kgf mm <sup>2</sup> )	70
Tensile strength( MPa )	292
Yield strength( MPa )	292

## Electrical Properties

Element	Value
Electrical resistivity( $\mu\text{Ohmcm}$ )	86@20@20°C
Temperature coefficient( K <sup>-1</sup> )	0.00201@0-100°C

## Physical Properties

Element	Value
Boiling point( C )	2863
Density( gcm <sup>3</sup> )	9.051@20°C

## Thermal Properties

Element	Value
Melting point( C )	1529
Latent heat of evaporation( J g <sup>-1</sup> )	1680
Latent heat of fusion( J g <sup>-1</sup> )	103
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	168@25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	14.5@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	9.2@0-100°C