

# Ytterbium Powder

**Formula:** Yb

**Percentage Purity:** 99.9%

**Maximum Particle Size:** 500µm

**Weight:** 10g

**CAS Number:** 7440-64-4

**UOM Code:** 075-917-54

**SKU:** 1000010741-group

**Product Code:** YB00-PD-000110

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	70
Crystal structure	Hexagonal close packed
Electronic structure	Xe 4f <sup>14</sup> 6s <sup>2</sup>
Valences shown	2,3
Atomic weight( amu )	173.04
Thermal neutron absorption cross-section( Barns )	37
Natural isotope distribution( Mass No./% )	173/ 16.2
Natural isotope distribution( Mass No./% )	174/ 31.7
Natural isotope distribution( Mass No./% )	172/ 21.9
Natural isotope distribution( Mass No./% )	168/ 0.1
Natural isotope distribution( Mass No./% )	170/ 3.1
Natural isotope distribution( Mass No./% )	171/ 14.3
Natural isotope distribution( Mass No./% )	176/ 12.7
Atomic radius - Goldschmidt( nm )	0.193
Ionisation potential( No./eV )	3/ 25.2
Ionisation potential( No./eV )	2/ 12.2
Ionisation potential( No./eV )	1/ 6.25

### Mechanical Properties

Element	Value
Hardness - Brinell	25

<b>Element</b>	<b>Value</b>
Material condition	Polycrystalline
Poisson's ratio	0.28
Bulk modulus( GPa )	13.5
Tensile modulus( GPa )	17.8
Tensile strength( MPa )	68.9
Yield strength( MPa )	65.5

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	28@20@20°C
Temperature coefficient( $\text{K}^{-1}$ )	0.0013@0-100°C

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	1194
Density( $\text{gcm}^{-3}$ )	6.977@20°C

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	819
Latent heat of evaporation( $\text{J g}^{-1}$ )	921
Latent heat of fusion( $\text{J g}^{-1}$ )	53.2
Specific heat( $\text{J K}^{-1} \text{kg}^{-1}$ )	145@25°C
Thermal conductivity( $\text{W m}^{-1} \text{K}^{-1}$ )	32.9@0-100°C
Coefficient of thermal expansion( $\times 10^{-6} \text{K}^{-1}$ )	25@0-100°C