

# Chromium Spherical Powder

**Formula:** Cr

**Percentage Purity:** 99%

**Minimum Particle Size:** 45µm

**Maximum Particle Size:** 150µm

**Weight:** 50g

**Product Shape:** Spherical

**Production Method:** Gas Atomised

**CAS Number:** 7440-47-3

**UOM Code:** 073-140-61

**SKU:** 1000010335-group

**Product Code:** CR00-PD-000128

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	24
Crystal structure	Body centred cubic
Electronic structure	Ar 3d <sup>5</sup> 4s <sup>1</sup>
Valences shown	2, 3, 6
Atomic weight( amu )	51.996
Thermal neutron absorption cross-section( Barns )	3.1
Photo-electric work function( eV )	4.4
Natural isotope distribution( Mass No./% )	50/ 4.35
Natural isotope distribution( Mass No./% )	52/ 83.79
Natural isotope distribution( Mass No./% )	54/ 2.36
Natural isotope distribution( Mass No./% )	53/ 9.5
Atomic radius - Goldschmidt( nm )	0.128
Ionisation potential( No./eV )	4/ 49.1
Ionisation potential( No./eV )	3/ 31.0
Ionisation potential( No./eV )	1/ 6.77
Ionisation potential( No./eV )	6/ 90.6
Ionisation potential( No./eV )	2/ 16.5
Ionisation potential( No./eV )	5/ 69.3

## Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.21
Poisson's ratio	0.21
Bulk modulus( GPa )	160.2
Bulk modulus( GPa )	160.2
Tensile modulus( GPa )	279
Tensile modulus( GPa )	279
Hardness - Vickers( kgf mm <sup>2</sup> )	130
Hardness - Vickers( kgf mm <sup>2</sup> )	220
Tensile strength( MPa )	689
Tensile strength( MPa )	103

## Electrical Properties

Element	Value
Electrical resistivity( $\mu\text{Ohmcm}$ )	13.2@20@20°C
Temperature coefficient( K <sup>-1</sup> )	0.00214@0-100°C

## Physical Properties

Element	Value
Boiling point( C )	2672
Density( gcm <sup>3</sup> )	7.1@20°C

## Thermal Properties

Element	Value
Melting point( C )	1857
Latent heat of evaporation( J g <sup>-1</sup> )	6580
Latent heat of fusion( J g <sup>-1</sup> )	260
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	518@25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	94@0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	6.5@0-100°C