

# Graphite Carbon Powder

**Grade:** Graphite

**Formula:** C

**Percentage Purity:** 99.997%

**Maximum Particle Size:** 75µm

**Weight:** 10g

**CAS Number:** 7440-44-0

**UOM Code:** 015-116-26

**SKU:** 1000001902-group

**Product Code:** C-00-PD-000111

## Material Properties for Metals

### Atomic Properties

| Element   | Value                              |
|---|------------------------------------|
| Atomic number                                     | 6                                  |
| Crystal structure                                 | Hexagonal/Diamond                  |
| Electronic structure                              | He 2s <sup>2</sup> 2p <sup>2</sup> |
| Valences shown                                    | 2, 3, 4                            |
| Atomic weight( amu )                              | 12.011                             |
| Thermal neutron absorption cross-section( Barns ) | 0.0034                             |
| Photo-electric work function( eV )                | 4.8                                |
| Natural isotope distribution( Mass No./% )        | 12/ 98.89                          |
| Natural isotope distribution( Mass No./% )        | 13/ 1.11                           |
| Atomic radius - Goldschmidt( nm )                 | 0.077                              |
| Ionisation potential( No./eV )                    | 6/ 490                             |
| Ionisation potential( No./eV )                    | 4/ 64.5                            |
| Ionisation potential( No./eV )                    | 1/ 11.26                           |
| Ionisation potential( No./eV )                    | 3/ 47.9                            |
| Ionisation potential( No./eV )                    | 2/ 24.38                           |
| Ionisation potential( No./eV )                    | 5/ 392                             |

### Mechanical Properties

| Element         | Value |
|-----------------|-------|
| Hardness - Mohs | 0.5-1 |

| <b>Element</b>         | <b>Value</b> |
|------------------------|--------------|
| Hardness - Mohs        | 10           |
| Material condition     | Diamond      |
| Material condition     | Graphite     |
| Bulk modulus( GPa )    | 33           |
| Bulk modulus( GPa )    | 542          |
| Tensile modulus( GPa ) | 4.8          |

## **Electrical Properties**

| <b>Element</b>                                    | <b>Value</b> |
|---|--------------|
| Electrical resistivity( $\mu\text{Ohmcm}$ )       | 1375@0@0°C   |
| Thermal emf against Pt (cold 0C - hot 100C)( mV ) | 0.7          |

## **Physical Properties**

| <b>Element</b>            | <b>Value</b> |
|---------------------------|--------------|
| Boiling point( C )        | 5000         |
| Density( $\text{gcm}^3$ ) | 2.25@20°C    |

## **Thermal Properties**

| <b>Element</b>   | <b>Value</b>    |
|--|-----------------|
| Melting point( C )   | 3650            |
| Specific heat( $\text{J K}^{-1} \text{kg}^{-1}$ )                  | 712@25°C        |
| Thermal conductivity( $\text{W m}^{-1} \text{K}^{-1}$ )            | 80-240@0-100°C  |
| Coefficient of thermal expansion( $\times 10^{-6} \text{K}^{-1}$ ) | 0.6-4.3@0-100°C |