# Carbon Sputtering Target

**Formula:** C
**Percentage Purity:** 99.997%
**Thickness:** 0.5mm
**Diameter:** 40mm
**CAS Number:** 7440-44-0
**UOM Code:** 004-596-48
**SKU:** 1000000597-group
**Product Code:** C-00-ST-000150

## Material Properties for Metals

### Atomic Properties

| Element | Value |
|---|---|
| Atomic number | 6 |
| Crystal structure | Hexagonal/Diamond |
| Electronic structure | He $2s^2$ $2p^2$ |
| 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 |
| Hardness - Mohs | 10 |

| Element | Value |
| --- | --- |
| Material condition | Diamond |
| Material condition | Graphite |
| Bulk modulus( GPa ) | 33 |
| Bulk modulus( GPa ) | 542 |
| Tensile modulus( GPa ) | 4.8 |

## Electrical Properties

| Element | Value |
| --- | --- |
| Electrical resistivity( µOhmcm ) | 1375@0@0°C |
| Thermal emf against Pt (cold 0C - hot 100C)( mV ) | 0.7 |

## Physical Properties

| Element | Value |
| --- | --- |
| Boiling point( C ) | 5000 |
| Density( gcm?³ ) | 2.25@20°C |

## Thermal Properties

| Element | Value |
| --- | --- |
| Melting point( C ) | 3650 |
| Specific heat( J K?¹ kg?¹ ) | 712@25°C |
| Thermal conductivity( W m?¹ K?¹ ) | 80-240@0-100°C |
| Coefficient of thermal expansion( x10?? K?¹ ) | 0.6-4.3@0-100°C |