

# Boron Sputtering Target

**Formula:** B

**Percentage Purity:** 99.6%

**Thickness:** 6mm

**Diameter:** 50.8mm

**Production Method:** Hot Pressed

**CAS Number:** 7440-42-8

**UOM Code:** 007-068-23

**SKU:** 1000000964-group

**Product Code:** B-00-ST-000200

## Material Properties for Metals

### Atomic Properties

| Element   | Value                              |
|---|------------------------------------|
| Atomic number                                     | 5                                  |
| Crystal structure                                 | Tetragonal                         |
| Electronic structure                              | He 2s <sup>2</sup> 2p <sup>1</sup> |
| Valences shown                                    | 3                                  |
| Atomic weight( amu )                              | 10.81                              |
| Thermal neutron absorption cross-section( Barns ) | 672                                |
| Photo-electric work function( eV )                | 4.5                                |
| Natural isotope distribution( Mass No./% )        | 11/ 80.2                           |
| Natural isotope distribution( Mass No./% )        | 10/ 19.8                           |
| Atomic radius - Goldschmidt( nm )                 | 0.097                              |
| Ionisation potential( No./eV )                    | 4/ 259                             |
| Ionisation potential( No./eV )                    | 2/ 25.2                            |
| Ionisation potential( No./eV )                    | 1/ 8.30                            |
| Ionisation potential( No./eV )                    | 5/ 340                             |
| Ionisation potential( No./eV )                    | 337.9                              |

### Mechanical Properties

| Element            | Value      |
|--------------------|------------|
| Hardness - Mohs    | 9.5        |
| Material condition | Arc melted |

| Element | Value |
|---------|-------|
|---------|-------|

Tensile modulus( GPa ) 441

Tensile strength( MPa ) 1580-2410

## Electrical Properties

| Element | Value |
|---------|-------|
|---------|-------|

Electrical resistivity(  $\mu\text{Ohmcm}$  )  $1.8 \times 10^{12}$ @27@27°C

## Physical Properties

| Element | Value |
|---------|-------|
|---------|-------|

Boiling point( C ) 3700

Density(  $\text{gcm}^3$  ) 2.34-2.37@20°C

## Thermal Properties

| Element | Value |
|---------|-------|
|---------|-------|

Melting point( C ) 2180

Latent heat of evaporation(  $\text{J g}^{-1}$  ) 35000

Latent heat of fusion(  $\text{J g}^{-1}$  ) 2090

Specific heat(  $\text{J K}^{-1} \text{kg}^{-1}$  ) 1030@25°C

Coefficient of thermal expansion(  $\times 10^{-6} \text{K}^{-1}$  ) 8.3@0-100°C