

Boron Filament

Formula: B

Diameter: 0.2mm

Length: 20m

CAS Number: 7440-42-8

UOM Code: 041-445-86

SKU: 1000005635-group

Product Code: B-00-MT-000115

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	5
Crystal structure	Tetragonal
Electronic structure	He 2s ² 2p ¹
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
Tensile modulus(GPa)	441

Element	Value
Tensile strength(MPa)	1580-2410

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	1.8×10^{12} @27@27°C

Physical Properties

Element	Value
Boiling point(C)	3700
Density(gcm^3)	2.34-2.37@20°C

Thermal Properties

Element	Value
Melting point(C)	2180
Latent heat of evaporation(J g^{-1})	35000
Latent heat of fusion(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