

= Boron nitride =

Boron nitride is a heat- and chemically resistant refractory compound of boron and nitrogen with the chemical formula BN . It exists in various crystalline forms that are isoelectronic to a similarly structured carbon lattice . The hexagonal form corresponding to graphite is the most stable and soft among BN polymorphs , and is therefore used as a lubricant and an additive to cosmetic products . The cubic ( sphalerite structure ) variety analogous to diamond is called c @-@ BN ; it is softer than diamond , but its thermal and chemical stability is superior . The rare wurtzite BN modification is similar to lonsdaleite and may even be harder than the cubic form .

Because of excellent thermal and chemical stability , boron nitride ceramics are traditionally used as parts of high @-@ temperature equipment . Boron nitride has potential use in nanotechnology . Nanotubes of BN can be produced that have a structure similar to that of carbon nanotubes , i.e. graphene ( or BN ) sheets rolled on themselves , but the properties are very different .

= = Structure = =

Boron nitride exists in multiple forms that differ in the arrangement of the boron and nitrogen atoms , giving rise to varying bulk properties of the material .

= = = Amorphous form ( a @-@ BN ) = = =

The amorphous form of boron nitride ( a @-@ BN ) is non @-@ crystalline , lacking any long @-@ distance regularity in the arrangement of its atoms . It is analogous to amorphous carbon . All other forms of boron nitride are crystalline .

= = = Hexagonal form ( h @-@ BN ) = = =