

= D6h ; space group =

P6<sub>3</sub> / mmc ) has a layered structure similar to graphite . Within each layer , boron and nitrogen atoms are bound by strong covalent bonds , whereas the layers are held together by weak van der Waals forces . The interlayer " registry " of these sheets differs , however , from the pattern seen for graphite , because the atoms are eclipsed , with boron atoms lying over and above nitrogen atoms . This registry reflects the polarity of the B - N bonds . Still , h -BN and graphite are very close neighbors and even the BC<sub>6</sub>N hybrids have been synthesized where carbon substitutes for some B and N atoms .

=== Cubic form ( c -BN ) ===

Cubic boron nitride has a crystal structure analogous to that of diamond . Consistent with diamond being less stable than graphite , the cubic form is less stable than the hexagonal form , but the conversion rate between the two is negligible at room temperature , as it is for diamond . The cubic form has the sphalerite crystal structure , the same as that of diamond , and is also called ? -BN or c -BN .

=== Wurtzite form ( w -BN ) ===