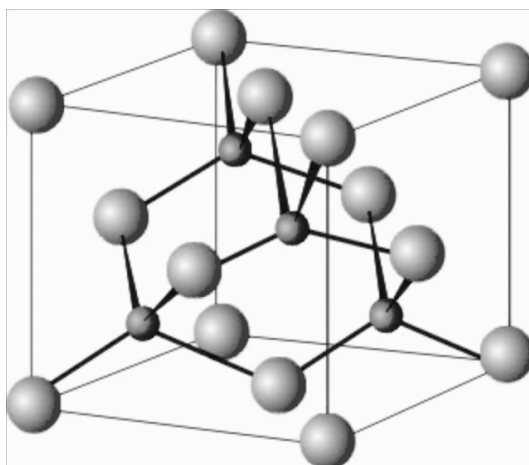


Marks
5

- The cubic form of boron nitride (borazon) is the second-hardest material after diamond and it crystallizes with the structure shown below. The large spheres represent the nitrogen atoms and the smaller spheres represent boron atoms.



From the unit-cell shown above, determine the empirical formula of boron nitride.

Answer:

Determine the oxidation state of the boron atoms.

Answer:

The cubic form of boron nitride is more thermally stable in air than diamond. Provide a reasonable explanation for this observation.