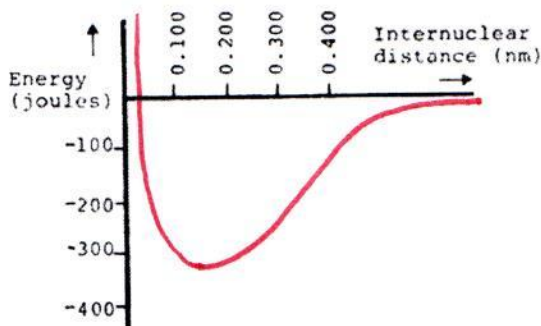


9 • Bonding and Molecular Structure

QUICK CHECK • 1

Sketch the potential energy involved as two hydrogen atoms approach each other.



As the two atoms get closer, the potential energy drops because of the attraction (attraction/repulsion) between the proton of one H atom and the electron of the other H atom.

The distance when the potential energy is a minimum is called the equilibrium bond distance.

Draw the following *Lewis Dot Diagrams*.

Be (ground state)	Be (bonding state)	Si (ground state)	Si (bonding state)
<u>Be:</u>	<u>• Be •</u>	<u>• Si •</u>	<u>• Si •</u>

Draw the *Lewis Dot Diagram* for Calcium Chloride. This compound is ionic (covalent/ionic). $[:\ddot{\text{Cl}}:]^- [Ca]^{2+} [:\ddot{\text{Cl}}:]^-$

Explain how this bond was formed in terms of the electrons. THE CALCIUM LOST TWO ELECTRONS WHILE EACH CHLORINE GAINED AN ELECTRON. THE OPPOSITELY CHARGED IONS ATTRACT EACH OTHER.

Draw the *Lewis Dot Diagram* for BeH₂. This compound is covalent (covalent/ionic).



Explain how this bond was formed in terms of the electrons. Be AND H SHARE ELECTRONS TO FORM COVALENT BONDS.

State the octet rule? OFTEN (BUT NOT ALWAYS) ATOMS GAIN, LOSE OR SHARE ELECTRONS UNTIL THEY ARE NEAR EIGHT e⁻s.

Is the compound BeH₂ obeying the octet rule? NO