

Chemical Bonding

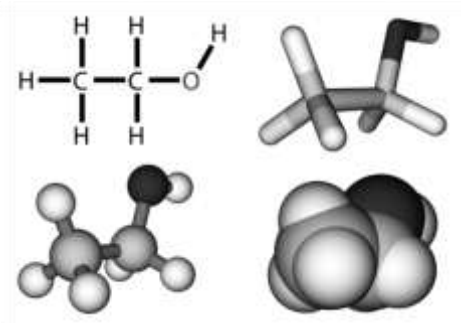
Chapter

CHEMICAL BONDING

Day - 1

Introduction

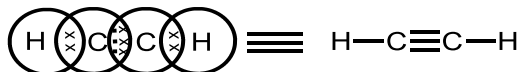
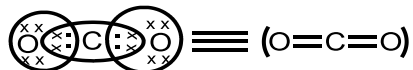
Chemical bond is defined as force that acts between two atoms/ions/molecules that holds them together.



1. Kössel-Lewis Approach to Chemical Bonding

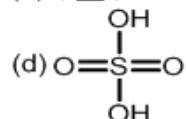
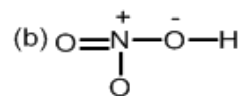
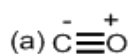
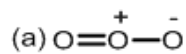
They assumed that atom have positive kernel surrounded by electrons occupying the corners of a cube. If they have all the eight electrons in their outer shell they will be stable (octet rule). Otherwise they achieve stability (octet) through chemical bonding.

Lewis Structure



Write Lewis structure of

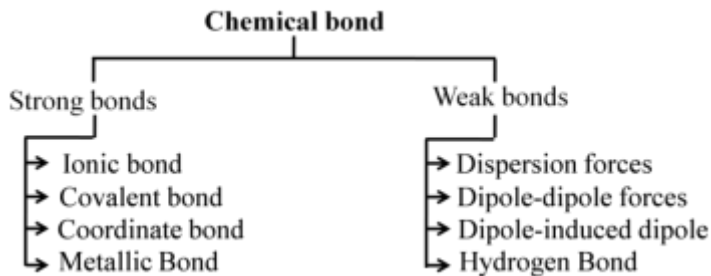
- O_3
- CO
- HNO_3
- H_2SO_4



Chemical Bonding

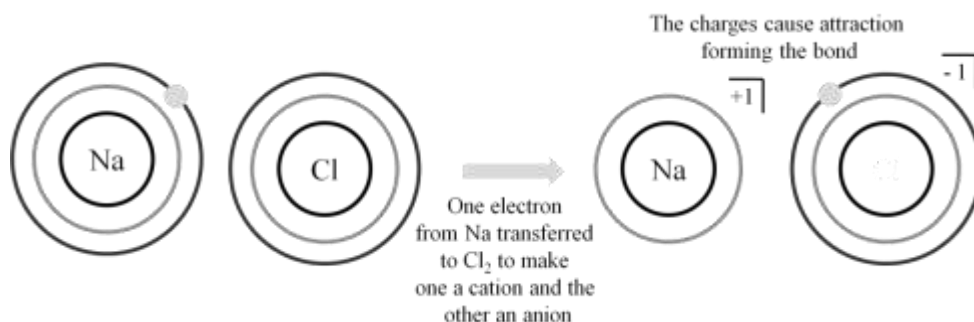
Why chemical bonds are formed.

If the resultant molecule has lower Gibb's energy then the reacting species chemical bonds are formed.

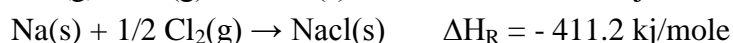
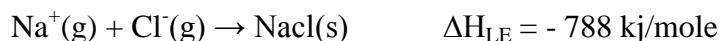
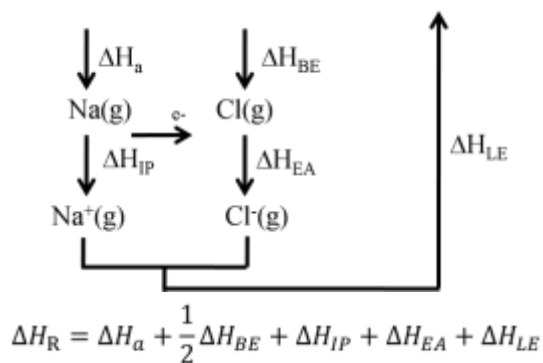
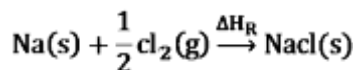


Ionic Bond

Ionic bonds are strong electrostatic forces between cation & anion which are formed when an atom loses an electron or gains an electron.

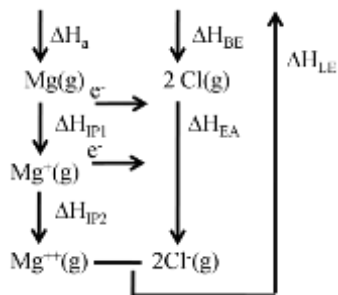
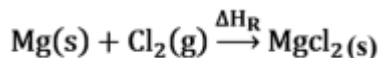


BORN HABER CYCLE FOR SODIUM CHLORIDE



Ex.1: Draw Born Haber cycle for formation of Magnesium chloride

Chemical Bonding

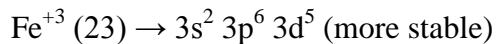
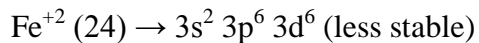
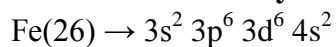


$$\Delta H_R = \Delta H_a + \Delta H_{IP_2} + \Delta H_{BE} + 2\Delta H_{EA} + \Delta H_{LE}$$

Properties of Ionic Compounds

1. They are crystalline in nature
2. They have high Melting and Boiling point
3. Hard and Brittle
4. Soluble in polar solvents
5. Conduct electricity in molten state and aqueous state but not in solid state.
6. Do not show Isomerism.

Variable Electrovalency



Question Practice Online