

Chemical Bonds and Ionic Compounds

A. Bonding : the electrostatic attraction between pairs of atoms or ions

- Ionic: when a bond is formed due to a transfer of e⁻
- Covalent: when a bond is formed due to the sharing of e⁻ b/w atoms

B. Electron Arrangement of Ions

- Metals lose e⁻ ->cations
- Non-metals gain e⁻ ->anions

Octet Rule – e⁻ are transferred or shared so that each atom ends up with 8 e⁻ in their valence shell (noble gas configuration)

*see page 68 for exceptions to the octet rule

C. Ionic Compounds

- Transfer of e⁻ from a metal to a non-metal or cation to anion eg. NaCl

D. Properties of Ionic Compounds

- Are crystalline solids at room temperature
- Melting them allows for electrical conductivity

Electrolyte: a substance that conducts electricity in the molten and solution state

- In solid form, ions are held in fixed places (crystal lattice structure)
- High melting point
- Commonly called a “salt”