

Honors Chemistry - Topic VI Outline

Chemical Bonding - The Ties That Bind

- I. Ionic Bonding** pp. 341-342; 351-352
- A. Properties of Ionic Compounds
 - B. Formation of Ionic Compounds
- II. Covalent Bonding** pp. 353-363; 343-345
- A. Bond Formation
 - 1. Lewis dot structures and the octet rule
 - 2. Multiple bonds
 - 3. Resonance structures
 - 4. Coordinate bonding
 - 5. Exceptions to the octet rule
 - B. Bond Polarity
 - 1. Electronegativity
 - 2. Percent ionic character
 - 3. Polar/non-polar vs. Ionic
 - C. Hybrid Atomic Orbitals
 - 1. Formation and occurrence
 - 2. Types of hybrids
 - D. *Valence Bond Theory- sigma and pi bonds
- III. Molecular Architecture** pp. 363-373; 346-347
- A. Predicting Shapes: VSEPR
 - B. Molecular Polarity
 - 1. Determining polarity of molecules- dipole moment
 - 2. Special properties of polar compounds
- IV. Intermolecular Forces** pp. 433-434
- A. Dipole-dipole attraction
 - B. Hydrogen Bonding
 - C. London dispersion forces
- V. Special Applications of Bonding** pp. 441-442; 609-630
- A. Metallic Bonding
 - B. Hydrocarbons
 - 1. Classes of hydrocarbons (overview)
 - 2. Functional groups
 - C. *Complex Ions

* Concept not in our textbook