

Unit 5 - Chemical Formulas and Bonding

(Honors Chemistry Syllabus) (Chapters 3, 7, 8, 10, and 21)

1. **Chemical symbols and formulas** (Sect. 3.4)
 - A. Chemical symbol
 - B. Chemical formula
2. **(Intramolecular) Chemical Bond** (Ch. 7)
 - A. Defn.
 - B. 3 Types of:
3. **The Octet Rule** (Ch. 7)
4. **Oxidation Number** (Ch. 7)
5. **Types of Ions** (Ch. 7)
 - A. Monatomic Ion
 - B. Polyatomic Ion
6. **Ionic compounds** (Ch. 7)
7. **2 Types of Ionic Compounds** (Ch. 7)
 - A. Binary Compounds
 - B. Tertiary Compounds
8. **Formulas and Nomenclature for Ionic Compounds** (Ch. 7)
9. **Metallic Bonds and The Electron Sea Model** (Ch. 7)
10. **Molecular Compounds (a.k.a.- molecules)** (Ch. 8)
11. **3 Types of Covalent Bonds** (Ch. 8)
 - A. Single
 - B. Double
 - C. Triple
12. **3 types of formulas for molecules** (Ch. 8)
 - A. Molecular Formula
 - B. Empirical Formula
 - C. Structural Formula (Lewis Structure)
13. **Diatomeric molecule** (Ch. 8)
14. **Molecular Formulas & Nomenclature** (Ch. 8)
15. **Electronegativity & Bond Character** (Ch. 8)
 - A. Nonpolar covalent bond
 - B. Polar covalent bond
 - C. Ionic bond
16. **Drawing Structural Formulas** (Ch. 8 & 21)
17. **Naming Organic Compounds (Hydrocarbons)** (Ch. 21)
18. **Hydrates** (Ch. 10)
 - A. General info.
 - B. Writing the names/formulas of these
19. **Acids** (Ch. 8)
20. **2 Types of Acids** (Ch. 8)
 - A. Binary Acids
 - B. Oxyacids
21. **Formulas & Nomenclature for Binary Acids** (Ch. 8)
22. **Formulas & Nomenclature for Oxyacids** (Ch. 8)
23. **Intermolecular (van der Waals) Forces** (Ch. 8)
 - A. Defn.
 - B. 3 Types of:
 - C. Properties

✓ **Unit 5 Internet help (On Mr. Segulin's Honors Chemistry Web-page):**

- Online Text and many other resources
- Chemical Formulas & Nomenclature

✓ **Review Questions:**

- ❖ Ch. 7 (pgs. 204-235): #'s 1-12, 17, 19-42, 46-62, 66-71, 73, 76-87, 91, 93, 99, 100, 102-104, 106-111, 114-117, 122, and 127.
- ❖ Ch. 8 (pgs. 238-277): #'s 1-11, 14-42, 50, 51, 55, 68-71, 74, 78-84, 88-97, 113-115, 117-120, 124-126, 130, 134, 139, and 140.
- ❖ Ch. 21 (pgs. 742-779): #'s 4, 19, 21a, 26, 39, 40, 45, 50, 52, 53, 55a, 56a, and 64.