

## Chemistry Notes 8/30/13

### ***Naming Compounds Cont.***

- Ionic Compounds (metal + nonmetal)
  - The metal is given its normal name
  - Change the ending of nonmetal to *-ide*
  - Use Roman numerals to indicate the charge on transition metals that have more than one possible charge ( $\text{Fe}^{2+}$  or  $\text{Fe}^{3+}$ )
  - Name polyatomic ions by their respective names
  - Ex.  $\text{CaCl}_2$ : Calcium Chloride
    - Calcium has a +2 charge and Chlorine has a -1
- Metals tend to lose electrons, so they gain a positive charge
  - Nonmetals tend to become negative (except Carbon, which can be +4/-4)
- Noble Gases don't form ions

### **Ionic Compound Naming Examples:**

$\text{Na}_2\text{S}$ : Sodium Sulfite

$\text{Al}_2\text{O}_3$ : Aluminum Oxide

### ***Transition Metals:***

- Varying charges
  - Exceptions:  $\text{Ag}^{+1}$  &  $\text{Zn}^{+2}$ 
    - $\text{AgCl}$ : Silver Chloride
    - $\text{ZnCl}_2$ : Zinc Chloride

### **Transition Metal Examples:**

$\text{FeCl}_2$ : Iron(II) Chloride

$\text{FeCl}_3$ : Iron(III) Chloride

$\text{Fe}_2\text{O}_3$ : Iron(III) Oxide

- Oxygen has a -2 charge, so -6 charge total

### ***Polyatomic Ions:* Chart in textbook (should memorize)**

- Ionic compounds that have a charge
  - Cations: Positively charged
    - $\text{NH}_4^+$ : Ammonium
  - Anions: Negatively charged

- $\text{CN}^-$  : Cyanide
- $\text{ClO}^-$  : Hypochlorite  $\text{ClO}_2^-$  : Chlorite
- $\text{NO}_2^-$  : Nitrite
- $\text{NO}_3^-$  : Nitrate

#### **Polyatomic Ion Examples:**

1.  $\text{NH}_4\text{Cl}$ : Ammonium Chloride
2.  $\text{NaNO}_3$ : Sodium Nitrate
3. Iron(III) Perchlorate:  $\text{Fe}(\text{ClO}_4)_3$
4.  $\text{Ca}(\text{OH})_2$ : Calcium Hydroxide
5.  $\text{NaOH}$ : Sodium Hydroxide
6. Lithium Phosphate:  $\text{Li}_3\text{PO}_4$

#### ***Naming Acids:***

1.  $\text{HCl}$ : Hydrogen Chloride
2.  $\text{HCl}_{(\text{aq})}$ : Hydrochloric Acid
3.  $\text{HI}_{(\text{aq})}$ : Hydroiodic Acid
  
4.  $\text{HCN}_{(\text{aq})}$ : Hydrocyanic Acid