**Molecular Equations and**

**Net Ionic Equations.**

 **Molecular equations: are normal chemical equations that you have balanced before.**

**Example: Making silver lab**

**Cu (s) + AgNO3(aq)🡪 Ag (s) + CuNO3 (aq)**

 **\*\*Remember “s” stands for solid and “aq” stands for aqueous.**

**When reactions occur between metals and solutions the isolated metal (or Copper in the example above) needs to be more reactive than the metal (or Silver) that is in the solution.**

 **Ionic equations: are chemical equations that list all of the ions separately.**

**Example:**

**Cu (s)+2 + NO3(aq)-2+ Ag+1(aq) 🡪 Cu(aq)+2 + NO3 -2(aq) + Ag+1 (s)**

**\*\*Since the Cu and Ag changed phase they are the ions that are responsible for the chemical reaction.**

**\*\*Since the Nitrate (NO3)-1 did not change phase it is not responsible for the chemical change and is called a spectator ion.**

 **Spectator Ions: Are ions in an ion exchange that are not responsible for the chemical reaction (remember the reaction occurred because the copper is more reactive than the silver according to an activity series).**

 **Net Ionic Equations: Are chemical equations with the spectator ions eliminated.**

**Example:**

**Cu (s)+2 + NO3(aq)-2+ Ag+1(aq) 🡪 Cu(aq)+2 + NO3 -2(aq) + Ag+1 (s)**

 **Spectator Ion**

**Net ionic equation:**

**Cu (s)+2 + Ag+1(aq) 🡪 Cu(aq)+2 + Ag+1 (s)**