**Lecture 1 – Chemical Reaction Basics** Name: \_\_\_\_\_\_\_\_

A chemical reaction can be written for a CHEMICAL CHANGE!!! (not a physical change!)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Symbols: Terminology:**

|  |  |
| --- | --- |
| + |  |
| → |  |
| ⇌ |  |
| (s) |  |
| (l) |  |
| (g) |  |
| (aq) |  |
| → |  |
| → |  |

Word Equation =

Skeletal Equation =

Law of Conservation of Mass =

Balanced Equation =

Subscripts =

Coefficients =

In order to be able to balance RXNs correctly, you MUST be able to count the # of individual ions/atoms in a formula!

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3CaF2 |  |  |  |  |
| 4Be(OH)2 |  |  |  |  |
| 2NO2 |  |  |  |  |
| 5Al2(SO4)3 |  |  |  |  |
| (NH4) 2SO3 |  |  |  |  |
| 7S2F2 |  |  |  |  |
| 4Al2(CO3)3 |  |  |  |  |
| 2CH4 |  |  |  |  |
| 2CaF2 |  |  |  |  |
| 3Be(OH)2 |  |  |  |  |
| NO2 |  |  |  |  |
| 4Al2(SO4)3 |  |  |  |  |
| 2(NH4) 2SO3 |  |  |  |  |
| 4S2F2 |  |  |  |  |
| 3Al2(CO3)3 |  |  |  |  |
| CH4 |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| RXN TYPE | DESCRIPTION | FORM | EXAMPLE |
| 1. Synthesis |  |  |  |
| 1. Decomposition |  |  |  |
| 1. Single Replacement |  |  |  |
| 1. Double   Replacement |  |  |  |
| \* Neutralization |  |  |  |
| 1. Combustion |  |  |  |

Identify the type and count the # of atoms of each element on either side of the equation:

\_\_\_\_\_1) \_\_\_\_ Na3PO4 + \_\_\_\_ Ca(OH) 2 🡪 \_\_\_\_ NaOH + \_\_\_\_ Ca3((PO4) 2

\_\_\_\_\_2) \_\_\_\_ P4 + \_\_\_\_ O2 🡪 \_\_\_\_ P2O3

\_\_\_\_\_3) \_\_\_\_ AgNO3 + \_\_\_\_ Cu 🡪 \_\_\_\_ Cu(NO3)2 + \_\_\_\_ Ag

\_\_\_\_\_4) \_\_\_\_ NH3 🡪 \_\_\_\_ N2 + \_\_\_\_ H2

\_\_\_\_\_5) \_\_\_\_ CH4 + \_\_\_\_ O2 🡪 \_\_\_\_ CO2 + \_\_\_\_ H2O