Symbols used in Chem. Equations

* The following indicate when substances are @ different states of matter:

$$NH_4NO_{3(s)} \rightarrow N_2O_{(g)} + 2H_2O_{(g)}$$

(s) = Solid
(l) = Liquid
(g) = gas
(aq) = Aqueous → Solutes dissolved in water

ex) $HCl_{(aq)} \rightarrow Cl_{2(g)} + H_{2(g)}$

* The following symbols are used to indicate when energy or substances are added into a reaction:

→ = "Yields" or "reacts to form"

$\xrightarrow{\Delta}$: Heat added ex) $2Fe + O_2 \xrightarrow{\Delta} 2FeO$

$\xrightarrow{\text{☀}}$ Sunlight added ex) $6H_2O + 6H_2O \xrightarrow{\text{☀}} C_6H_{12}O_6 + 6O_2$

$\xrightarrow{\text{⚡}}$ Electricity added ex) $2NaCl \xrightarrow{\text{⚡}} 2Na + Cl_2$

$\xrightarrow{\text{catalyst formula}}$ = when a substance is used as a catalyst in a reaction

- remember - a <u>catalyst</u> helps rxns occur - but <u>NOT</u> involved or changed

ex) $C_7H_6O_3 + C_4H_6O_3 \xrightarrow{H_2SO_4} C_9H_8O_4 + C_2H_4O_2$

Aspirin

* H_2SO_4 was used as a catalyst in the formation of Aspirin