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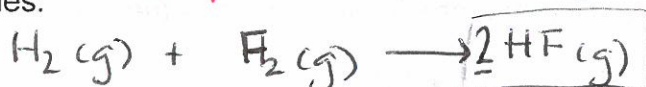
Chemistry 11
PREDICTING PRODUCTS FOR CHEMICAL REACTIONS

Type 1. SYNTHESIS: A + B → AB

What to look for: Two ELEMENTS react

How to predict the products: The compound that is formed is the result of the criss-crossing of the most common combining capacities of the elements involved. (top on the P.T. w/ charges)

Examples:

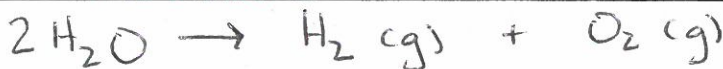


Type 2. DECOMPOSITION: AB → A + B

What to look for: A SINGLE COMPOUND as the only reactant

How to predict the products: Break the compound into the individual ^{neutral} elements that make it up.

Examples:



Type 3. SINGLE REPLACEMENT: M + AB → MB + A or N + AB → AN + B

What to look for: An ELEMENT reacts with a compound.

How to predict the products: Based on the activity series (yesterday) a rxn will only occur if the lone element is higher on the table (criss cross using most common combining capacity).

Examples:

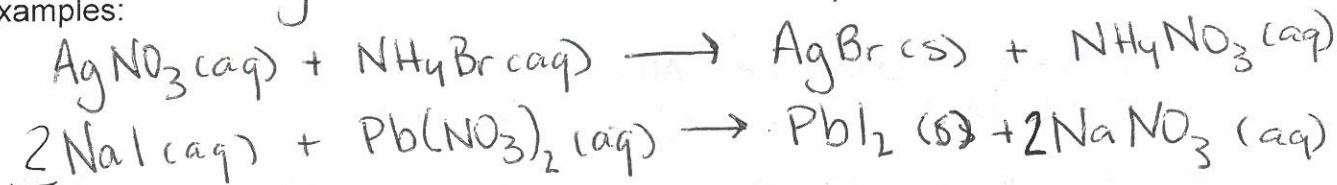


Type 4. DOUBLE REPLACEMENT: AB + XY → AY + XB

What to look for: Two compounds react

How to predict the products: The compounds "switch partners" (metals with non-metals ONLY)
Then identify the PHASE of the products.

Examples:



Identifying the phases of the products: USING THE TABLE OF SOLUBILITIES

Soluble: The substance will form an aqueous solution and have the symbol (aq).

Low Solubility: The substance will form a precipitate and have the symbol (s).

TYPE 5. NEUTRALIZATION: HB + AOH → AB + H₂O

What to look for: An ACID ('H') and Base ('OH') react

How to predict the products: The H⁺ from the acid and the OH⁻ from the base form H₂O(l) and the other metal + non-metal combine to form a salt.

Examples:



TYPE 6. COMBUSTION: C_xH_y + O₂ → CO₂ + H₂O

What to look for: A hydrocarbon reacting with oxygen

How to predict the products: the products formed are always CO₂(g) and H₂O(l)

* if sulfur is in the hydrocarbon → CO₂(g) + H₂O(l) + SO₂(g).*

Examples:

