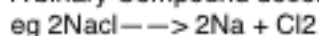


Decomposition

A binary Compound decomposes into it's elements



A metal Nitrite decomposes into a metal nitrite and oxygen gas



A metal carbonate into a metal oxide and carbon dioxide gas



A metal hydroxide decomposes into a metal oxide and water



Single Displacement

- Single displacement occurs when an element is higher on the activity series
- If it is higher on the activity series it will displace that element if it is not, no reaction will occur
- There is a activity series for halogens as well
- When an element displaces another you must write a balanced equation

Double Displacement

- Double displacement occurs when the anions and cations switch places
- $\text{AB} + \text{CD} \longrightarrow \text{AD} + \text{BC}$
- You must check if either product is a precipitate, if both products are aqueous no reaction will occur

Combustion

- A chemical reaction in which a fuel burns in oxygen to produce combustion products

Complete Combustion

- When the products produced are carbon dioxide and water
- Occurs when there is a plentiful supply of oxygen
- $\text{CH}_4(\text{g}) + 2 \text{O}_2(\text{g}) \longrightarrow \text{CO}_2(\text{g}) + 2 \text{H}_2\text{O}(\text{g}) + \text{energy}$

Incomplete Combustion

- When the products may include carbon dioxide **soot, carbon monoxide**
- Occurs when there is a limited supply of oxygen
- $2 \text{C}_7\text{H}_{16}(\text{l}) + 11 \text{O}_2(\text{g}) \longrightarrow 14 \text{CO}(\text{g}) + 8 \text{H}_2\text{O}(\text{g}) + \text{energy}$

Concerns Related to Incomplete Combustion

- Soot particles from incomplete combustion are an inhalation hazard
- Soot particles are too small to be filtered by the respiratory tract and as a result these particles may penetrate deep into the lungs and irritate tissue
- Carbon Monoxide also produced is a silent killer