

H.P. INTERNATIONAL SCHOOL BUDAUN

HARSHIT GUPTA

class - 10 **sub- chemistry**

Chemical Reactions And Chemical Equations (Remaining)

Types of chemical reactions

Chemical reactions can be of many types;

1. Combination reaction
2. Decomposition reactions
3. Displacement reactions
4. Double displacement reactions
5. Precipitation reaction
6. Exothermic reactions
7. Endothermic reactions
8. Neutralisation reactions
9. Oxidation-reduction reactions or Red-ox reactions

Oxidation-Reduction Reactions or Red-Ox Reactions

Combination Reaction

Neutralisation Reactions

Decomposition Reaction

Chemical Reactions

Endothermic Reactions

Displacement Reactions

Exothermic Reactions

Double Displacement Reactions

Precipitation Reaction

1. Combination reaction :- The reactions in which two or more substances combine together to form a new substance, are known as **combination reactions**.

For example :-

1. Sulphur dioxide and oxygen combine to form sulphur trioxide.



2. Calcium oxide and carbon dioxide combine to form calcium carbonate.



3. Magnesium oxide and water combine to form magnesium hydroxide.



4. many combustion reactions are also combination reactions like combustion of carbon, combustion of magnesium, etc.



5. Synthesis reactions are also combination reactions.

" the combination reaction in which a compound is formed from its constituent elements are called synthesis reactions"

For example synthesis of ammonia, synthesis of hydrogen chloride, etc.



2. Decomposition reactions:- These reactions are opposite to combination reactions. thus, " the reactions in which a substance is broken down into two or more simple substances, are known as **decomposition reaction**".

Decomposition reaction can further divided into three types-

Decomposition Reactions

Thermal Decomposition

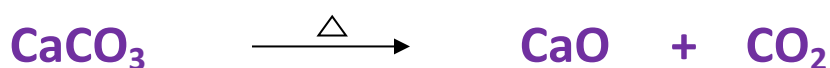
Photo Decomposition

Electrolytic Decomposition OR Electrolysis

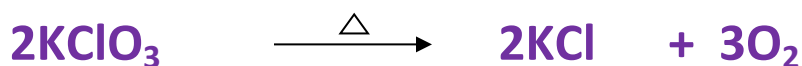
A. Thermal decomposition:- decomposition reaction caused by heating is called thermal decomposition.

For example:-

1. Limestone (calcium carbonate) when heated strongly, it decomposes into quicklime (calcium oxide) and carbon dioxide.



2. Potassium chlorate when heated, decomposes to give Potassium Chloride and oxygen



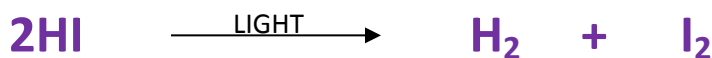
B. Electrolytic decomposition or electrolysis :- decomposition reaction caused by electricity is called electric decomposition or electrolysis.

For example:- Water is decomposed into hydrogen and oxygen when electricity is passed through acidified water.



C. Photo decomposition :- decomposition reaction caused by light (radiations) is called photo decomposition.

For example:- Hydrogen iodide is decomposed in the presence of light into hydrogen and Iodine.



3. Displacement reaction :- the reactions in which one part of a molecule is replaced by another group or atom then such reactions are known as **displacement reactions**. These reactions are also known as **substitution reactions**.

For example:-

1. Displacement of copper from copper sulphate solution by iron, zinc, etc.



2. Displacement of less reactive halogen from its salt solution by a more reactive halogen. [F > Cl > Br > I]



3. Displacement of hydrogen from acids by active metals.



4. Double displacement reaction :- A reaction in which two reacting ionic compounds exchange their corresponding exchange their corresponding ions is called a **double displacement reaction**.

For example:-

1. Silver nitrate react with sodium chloride to form silver chloride and sodium nitrate.



2. Barium chloride reacts with sulphuric acid to give barium sulphate and hydrogen chloride.



5. Precipitation reaction :- The reaction in which one of the products formed is an insoluble substance and is thrown out of the solution as a precipitate, is called **precipitation reaction**. the substance that separate out as precipitate is indicated by a downward arrow (↓).

For example:-

1. Aluminium chloride reacts with ammonium hydroxide to form the precipitate (ppt.) of aluminium hydroxide.



2. Barium chloride reacts with silver nitrate to form the ppt. of silver chloride.



HOMEWORK

1. Identify the type of reaction;

- Nitrogen combines with hydrogen to form ammonia.
- Sodium carbonate on reaction with hydrochloric acid gives sodium chloride and sodium hydrogencarbonate.
- Aluminium reacts with hydrochloric acid to give aluminium chloride and produces hydrogen gas.
- Zinc oxide is heated with carbon to reduced into zinc metal with the libration of carbon mono oxide.
- Zinc reacts with silver nitrate to form the zinc nitrate and silver metal.
- Barium chloride reacts with sulphuric acid to form hydrochloric acid and the ppt of barium sulphate.

Note:- It is mandatory for all students to complete the work and home work before the next lecture of chemistry. At the time of next class all students should upload a photo of home work.

THANK YOU