Chemical Reactions and Equations

Whenever a chemical change occurs i.e. the nature and the identity of the initial substance change, we can say that chemical reaction has taken place

for example:

i) Cooking of food ii) Rusting of iron iii) Souring of milk.

iv) Burning of magnesium ribbon with a dazzling white flame and changing into a white powder

v) formation of yellow precipitate of lead iodide when potassium iodide solution is added to lead nitrate solution in a test tube.

vi) The evolution of hydrogen gas and rise in temperature when dilute hydrochloric acid or sulphuric acid is added to zinc granules in a conical flask.

Characteristics of a chemical reaction

i) Evolution of gas

ii) Change in temperature

iii) formation of precipitate

iv) Change in colour

v) Change of state

Representation of chemical reaction

Word equation.

It is a short way to represent a chemical reaction.

for example:

Chemical reaction magnesium burns in air to give magnesium oxide can be represented as:

Magnesium + Oxygen ⟶ Magnesium oxide
(Reactant) (Product)

Substances that undergo change in a chemical reaction are called reactants.

New substances formed after chemical reaction are called products.

The reactants are written on the left-hand side with a plus sign (+) between them.
The products are written on the right hand side with a plus sign (+) between them.
An arrow pointing towards the products is placed inbetween reactants and products. This shows direction of chemical reaction.

Chemical equation

When word equation is represented by formulas of substances, it becomes chemical equation. A chemical equation is a symbolic representation of an actual chemical change in terms of symbols or formulae of the reactants and products.

For example:

carbon + oxygen ⟶ carbon dioxide (word equation)

$C + O_2 \rightarrow CO_2$ (chemical equation)