Chemical Equation

All chemical reactions are represented by chemical equations. A chemical equation is a shorthand representation of a chemical reaction using the symbols and formulae of substance involved in the chemical reaction.

The symbols and formulae of the substances (elements or compounds) are arranged to show the reactants and products of a chemical reaction.

Examples:

1. When potassium nitrate is heated, it gives potassium nitrite and oxygen. This reaction may be represented in the form of a chemical equation as follows.

$$\underset{\text{potassiumnitrate}}{KNO_3} \rightarrow \underset{\text{potassiumnitrite}}{KNO_2} + \underset{\text{oxygen}}{O_2}$$

2. Zinc and dilute sulphuric acid react to form zinc sulphate and hydrogen. This reaction is represented by a chemical equation as

$$Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$$

Rules for writing chemical equation:

Certain rules have to be followed while writing a chemical equation.

1. The reactants taking part in the reaction are written in terms of their symbols or molecular formulae on the left-hand side of the equation.
2. A plus (+) sign is added between the formulae of the reactants.
3. The products of reaction are written in terms of their symbols or molecular formulae on the right-hand side of the equation.
4. A plus (+) sign is added between the formulae of the products.
5. In between the reactants and the products an arrow sign (→) is inserted to show which way the reaction is occurring.

$$A + B \longrightarrow C + D$$

In this chemical equation, A and B are the reactants, and C and D are the products. The arrow indicates that the reaction proceeds towards the formation of C and D.