

Revision Notes for Class 10 Science

Chapter 1 – Chemical Reactions and Equations

Chemical Change: A change that results in the formation of one or more new compounds. Chemical changes are also known as chemical reactions.

Observations in a Chemical Reaction

In a chemical reaction or chemical change, the following observations can be made,

- Formation of new substances.
- Change in mass.
- Changes in energy.
- Evolution of gas.
- Change in temperature.
- Permanent change in colour and/or state.
- Formation of a precipitate.

Examples :

- A. Cooking of food
- B. Rusting of iron
- C. Heating of Lead nitrate
- D. Souring of milk
- E. Ripening of fruit.

Now the only unbalanced one is Chlorine. On the left hand side, there are 16 Cl. On the right hand side, firstly, there are 2 Cl in 2 KCl + 4 Cl in 2 MnCl₂, making total of 6(2 + 4). So, 10 more Cl atoms are to be accounted for. So, place 5 in front of Cl₂ to make it 10 (5 x 2).



The Hit and Trial approach is a technique for balancing chemical equations.

Short Technique for Balancing a Chemical Equation

Let us take the same chemical reaction and try to balance it using a short technique which will save you time and effort in the exam. Let the number of molecules on each side be,



Now comparing LHS and RHS

$$\text{K: } a = c$$

$$\text{Mn: } a = d$$

$$\text{O: } 4a = e$$

$$\text{H: } b = 2e$$

$$\text{Cl: } b = c + 2d + 2f$$

Let us take $a = 2$, then

$$c = d = a = 2$$

$$b = 2e = 8a = 16$$

$$\text{So, } e = 8$$

$$\text{So, } 16 = 2 + 2(2) + 2(f)$$