Chemical Reactions and Equations

Introduction to Chemical Reactions and Equations

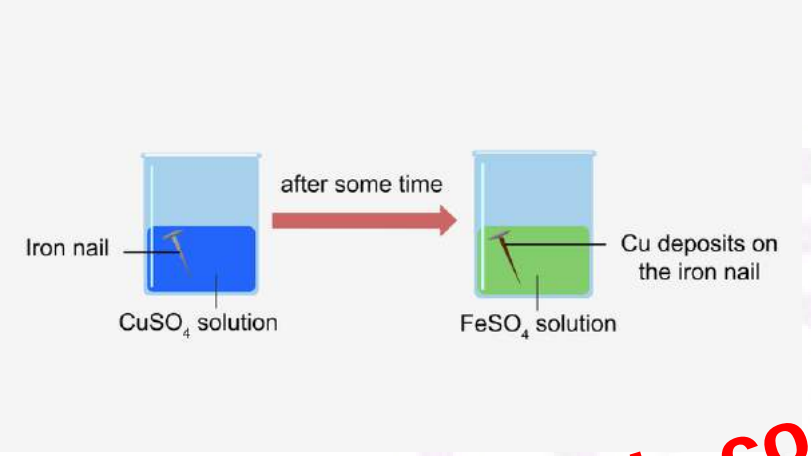
Physical and chemical changes

Chemical change - one or more new substances with new physical and chemical properties are formed.

Example: $Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$

(Blue) (Green)

Here, when copper sulphate reacts with iron, two new substances, i.e., ferrous sulphate and copper are formed.



Physical change - change in colour or state occurs but no new substance is formed.

Example: Water changes to steam on boiling but no new substance is formed(Even though steam and water look different when they are made to react with a piece of Na, they react the same way and give the exact same products). This involves only change in state (liquid to vapour).

Observations that help determine a chemical reaction

A chemical reaction can be determined with the help of any of the following observations:

a) Evolution of a gas
b) Change in temperature
c) Formation of a precipitate
d) Change in colour
e) Change of state

Chemical reaction

Chemical reactions are chemical changes in which reactants transform into products by making or breaking of bonds(or both) between different atoms.

Types of chemical reactions