

Change

- We notice many changes taking place around us on their own.
- For instance, flowers bloom and wither with time, crop changes from time to time. Changes takes place in our body also like increase in height and weight etc.
- When one or more properties of a substance become different or something new is formed, it is known as a change.
- For example, burning of fireworks, formation of curd, ripening of fruits, drying of clothes.
- Changes are of two types: **physical and chemical change**.

Physical Change

- Properties such as shape, size, colour and state of a substance are called its physical properties.
- A change in which only the physical properties of a substance changes is called a physical change.
- Physical changes are generally reversible in nature. In such changes no new substance is formed.

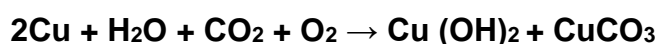
Chemical Change

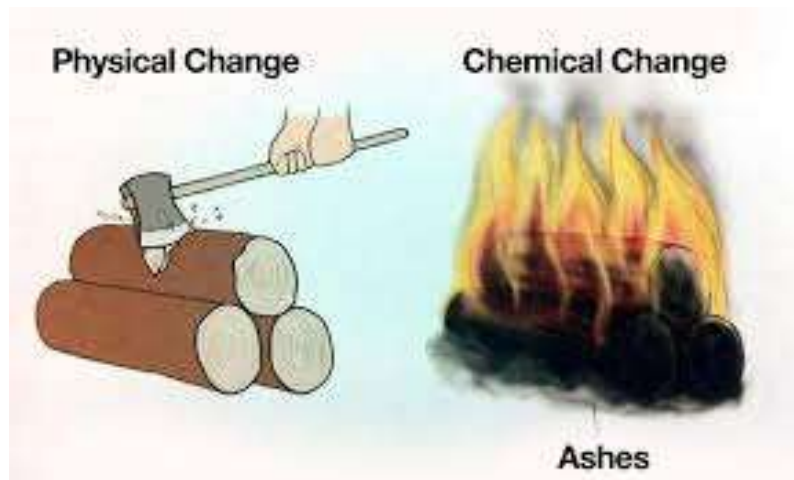
- A change resulting in formation of one or more new substances is called a chemical change. A chemical change is also called a chemical reaction.
- Best example is rusting of iron. The iron reacts with oxygen in the presence of air and moisture to develop a brownish layer know as rust. Chemically rust is hydrated ferric oxide



Ferric oxide (rust)

- Corrosion causes huge damage to iron bridges, railings, ships and all article and monuments made of iron.
- In case of rusting of copper, the metallic copper reacts with carbon- dioxide, oxygen and moisture to produce a green colour layer. Chemically this is copper hydroxide and copper carbonate.



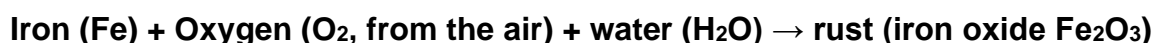


Changes occurring in a chemical change

- Chemical changes play a very important in our day to day lives.
- All new substances are formed as a result of some or the other chemical changes.
- For example, digestion of food in our body, ripening of fruits, fermentation of grapes, making curd, cooking food etc are all examples of chemical changes.
- Useful new materials synthesized by man, such as medicines, plastics and detergents, soaps, clothes are produced by series of chemical reactions.
- Chemical changes accompany other changes as well such as heat or light is produced or absorbed, sound may be produces, some gas may evolve, change is colour is also observed.

Rusting of Iron

- The process of rusting can be represented by the following equation:



- For rusting, both oxygen and water (or water vapour) should be present.
- In fact, if the moisture content in air is high, which means if it is more humid, the process of rusting becomes faster.
- To prevent rusting, layer of metals like chromium, zinc, is coated on iron objects.
- The process of depositing or coating of zinc on iron is called galvanisation.



Crystallisation

- The process by which crystals of pure substances are obtained from their solutions Crystallisation.
- The best example of Crystallisation is salt formation from sea water.
- In laboratory crystals of copper sulphate can be obtained by boiling copper sulphate powder in water. Few drops of dilute sulphuric acid are also added.
- The solution is then filtered and allowed to cool to get the crystals.