Homogeneous mixtures or Solutions

- particles get uniformly distributed and are very stable
- Doesn't shows tyndall effect
- Can't seen by naked eyes
- Special methods are used to seperated the particles
- Size of particles
- Eg: Salt in water
  Sugar in water
  Alloys etc.

- Tyndall effect : The phenomenon in which light get passed through the mixture due to scattering when hits by particles.
- Alloys : A type of solution when two metals get mixed to form new mixture.

Methods to seperated solutions :-

1. Evaporation : It is the method in which volatile component (solvent) get converted into vapours below boiling point
   Eg: seperating dye from water in ink

2. Centrifugation : The process in which denser particles are forced to the bottom and lighter particles stay at top when spun rapidly
   eg : seperating cream from milk, used in blood & urine tests.

3. Using seperating funnel : In this two immiscible liquids are seperated using seperating funnel by keeping the undisturbed
   eg : seperating mixture of oil and water
   in extraction of iron from its ore

4. Chromatography : It is the method to seperate those solutes that dissolve in same solven eg : to seperate : colors in dye, pigments from natural colors, drugs from blood.
5. Distillation : Used to seperate the mixtures by boiling having B.P. difference greater than 25°C eg : seperating acetone and water.
6. Fractional Distillation : Used to seperate the mixtures by boiling have B.P difference less than 25°C eg : seperating gases from air, etc.
7. Crystallisation : The process to purify solid in its crystal forms from its solutions eg : obtaining pure copper sulphate from impure one.
   purification of salt from sea water

Physical changes : The change in which no new substance are formed eg: freezing of water, boiling of water etc.

Chemical changes : The change in which new substance are formed eg: Rusting of iron
Cooking of food etc.

Acc. to purity of matter it is divided into 2 parts

Pure Substance
(Constitute by single type of particles)

Elements
- Basic form of matter that cannot be divided into further simpler substance

Compounds
- Made up of 2 or more element

→ Metals :
- Have lusture (shine)
- Have silvery grey or golden-yellow colour
- Conduct heat & electricity
- Are ductile (drawn into wires)
- Are malleable (convert into thin sheets)
- Are sonorous (make ringing sound)
- Eg → silver, copper, iron etc.

→ Non Metal :
- Display variety of colours
- poor conductors of heat & electricity
- not lustrous, sonorous or malleable.
- Eg → carbon, bromine, chlorine etc.

→ Metalloids : eg : boron, silicon, germanium etc.

Mixture
(constituted by more than one kind of pure matter)

Heterogeneous mixture

Colloidal solution
- particles get uniformly distributed and are quite stable
- Shows tyndall effect
- can't seen by naked eyes
- Can remove by centrifugation
- Size of particles
- Eg → milk, ink, etc.

Suspension
- particles not get dissolved and are unstable and gets settle down
- Shows tyndall effect
- can seen by naked eyes
- can remove by normal filtration
- Size of particles :
- Eg → chalk in water, sand in water, etc.

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