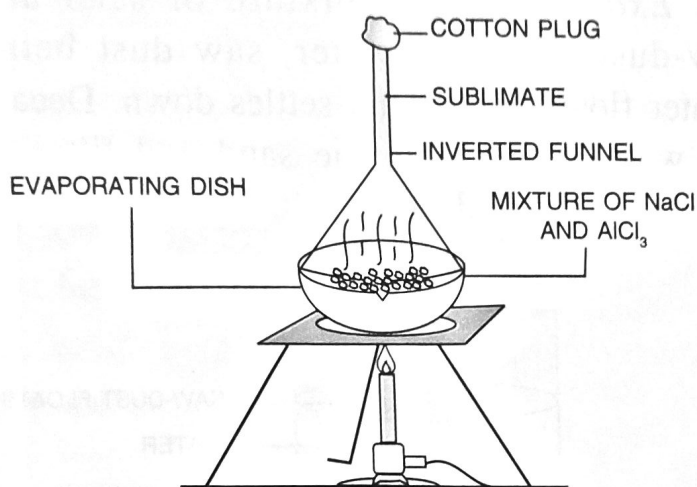


Activity 1

To separate common salt and ammonium chloride.

Take a mixture of common salt and ammonium chloride and place it in a dish and cover it with an inverted funnel as shown below and heat it. On heating, ammonium chloride changes into vapour, which condenses into a solid in the neck of the funnel (from where it may be scraped off), whereas common salt is left behind in the dish.



Sublimation : Separating a mixture of common salt and ammonium chloride

5. Solvent extraction method : This method is used when one of the components of a mixture is soluble in a particular liquid, either water or any other solvent, and the other component, which is insoluble, is separated as a residue by filtration or is decanted.

Example : A mixture of sodium chloride and calcium carbonate can be separated by this method. Salt gets dissolved in water while calcium carbonate being insoluble settles down in the container. The salt solution is then poured out (decanted), leaving behind calcium

carbonate. Salt is obtained from the solution by evaporation as water evaporates leaving behind salt.

Table 3.6 : Some substances and their solvents

Substance	Solvent
1. Sulphur	Carbon disulphide
2. Paint	Turpentine oil
3. Rust	Oxalic acid
4. Rubber	Benzene
5. Nail polish	Acetone
6. Nitre (potassium nitrate)	Water
7. Grease	Petrol
8. Iodine	Ethyl alcohol
9. Chlorophyll	Methylated spirit

6. By fractional crystallisation : This method is used when the solubility of solid components of a mixture is different in the same solvent.

For example : In a mixture of common salt and potassium nitrate, both are soluble in water but solubility of potassium nitrate is more than that of sodium chloride in water.

When the hot solution containing the mixture is cooled, potassium nitrate crystallises out first leaving behind sodium chloride. The solution left behind is boiled again and cooled to separate more potassium nitrate. The process is repeated for complete separation.

(B) Separation of solid-liquid mixtures

Such mixtures can be homogeneous or heterogeneous. Different methods are used to separate them depending upon the type of mixture.

1. Sedimentation and decantation : The settling down of suspended, insoluble, heavy solid particles in a solid-liquid mixture when left undisturbed is called **sedimentation**.

The solid which settles at the bottom is called **sediment** while the clear liquid above it is called **supernatant liquid**.

The process of pouring out the clear liquid, without disturbing the **sediment**, is called **decantation**.

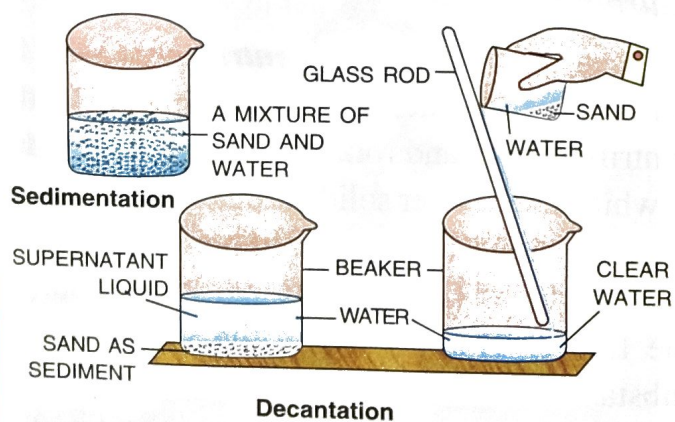
This method is used for a heterogeneous mixture of a solid and a liquid, where the solid component is insoluble and heavier than the liquid component.

Example : A mixture of sand and water.



Activity 2

Take some sand and water in a beaker and stir it. Now allow the mixture to stand for some time. You will see that the sand settles at the bottom of the beaker. This is called **sedimentation**. Now pour the water gently into another vessel without disturbing the sand. This process is called **decantation**.



2. Filtration : The process of separating insoluble solid particles from a liquid-solid mixture by allowing it to pass through a filter is called filtration. The insoluble solid left on the filter is called **residue** while the liquid which passes through the filter is called **filtrate**.

This method is used for separating the components of solid-liquid mixtures in which solids are insoluble in the liquid.

Example : Chalk and water, clay and water, sawdust and water, etc.

The common filters used are filter paper, charcoal, glass wool, layer of sand, etc.

Suspended solid particles are removed from natural water by filtering it through a bed of sand or gravel.



Fig. 3.5 Folding of a filter paper

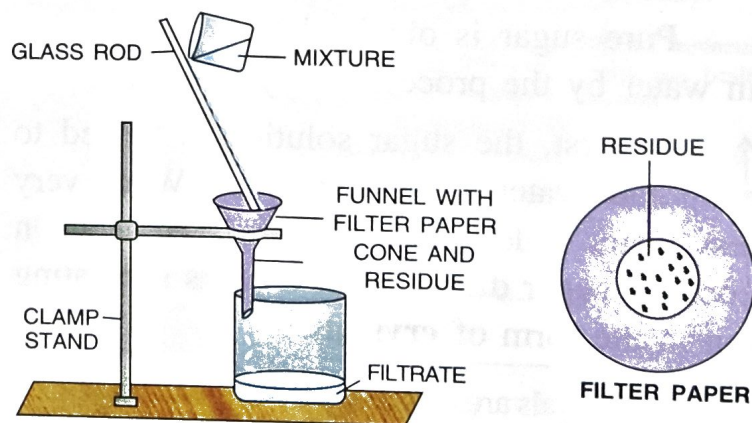


Fig. 3.6 Filtration using a funnel and filter paper

3. Evaporation : Evaporation is the process of converting a liquid into its vapour state, either by exposing it to air or by heating.

This method is used to separate the components of a homogeneous solid-liquid mixture, in which only the solid is recovered while the liquid escapes in the form of vapour.

Example : From a mixture of common salt and water, salt is obtained easily by evaporating the solution.

Salt from sea water is separated out by this method.

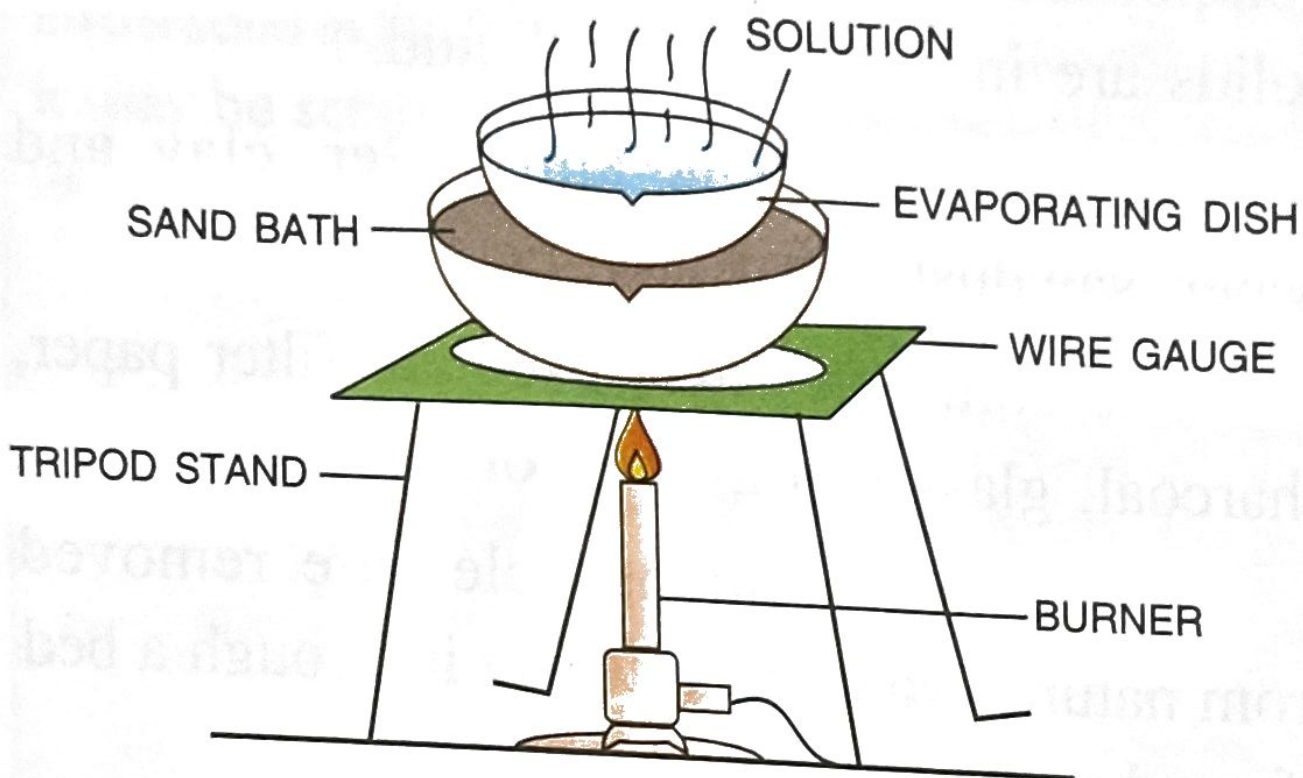


Fig. 3.7 Evaporation

Wk	M	T	W	T	F	S	S
27			1	2	3	4	5
28	6	7	8	9	10	11	12
29	13	14	15	16	17	18	19
30	20	21	22	23	24	25	26
31	27	28	29	30	31		

APPOINTMENT / MEETING

Class - VIII

Chapter-3 Element, Compound, mixture

Part-2

Date-4.8.20 Subject Chemistry

① Give the principle of solvent extraction method. Explain with an eg.

② What is fractional distillation method? Give an eg.

③ What is sedimentation?

④ What is decantation?

⑤ What is sediment and supernatant liquid?

⑥ Give an eg. of sedimentation.

⑦ What is filtration?

⑧ What is filtrate and residue?

Sunday 19

⑨ Give an eg. of filtration.

NOTES

⑩ What is Evaporation? How can you separate common salt from sea water by evaporation?

P. Sw L
4.6.20