RABINDRANATH WORLD SCHOOL
GURGAON
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CLASS 6TH

SCIENCE

Separation of Substances

May, 2021

Mixture

- A mixture is made up of two or more than two pure substances. These pure substances are called components of the mixture.
- Most of the things which we use in our daily life are mixtures. Like air, milk, tea, coffee, soil ,soft drinks etc.
- A mixture can be solid, liquid or gas.
- In some cases we can easily see the different components of mixture while in some cases we cannot see the components.


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Reasons for Separating mixtures into their Components

1. To remove an undesirable component.
2. To remove a harmful component.
3. To obtain the pure sample of a substance.
4. To obtain useful component.

Methods of separation

When we want to separate the components of a mixture, we should first find out some properties which would be different for different components.

Some of the common methods of separation are:

1. Threshing
2. Winnowing
3. Hand – Picking
4. Sieving
5. Magnetic separation
6. Decantation, Sedimentation and Filtration
7. Evaporation
8. Distillation

Threshing

It is the process in which stalks are beaten to separate grains from the stalks and from the chaff that covers the grains.

This is done by hands, with the help of cattle or by machines


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Winnowing

After winnowing we get a mixture of grains and husk. To use grains, husk has to be removed.

Winnowing is the method of separating husk from grains (wheat, rice) with the help of wind.

Hand- Picking

We cannot separate small stone particles from grain by winnowing.
For this we have to use the method of hand picking.
This method is usually used to separate undesirable substances such as small pieces of stones from wheat, rice and pulses.

Sieving

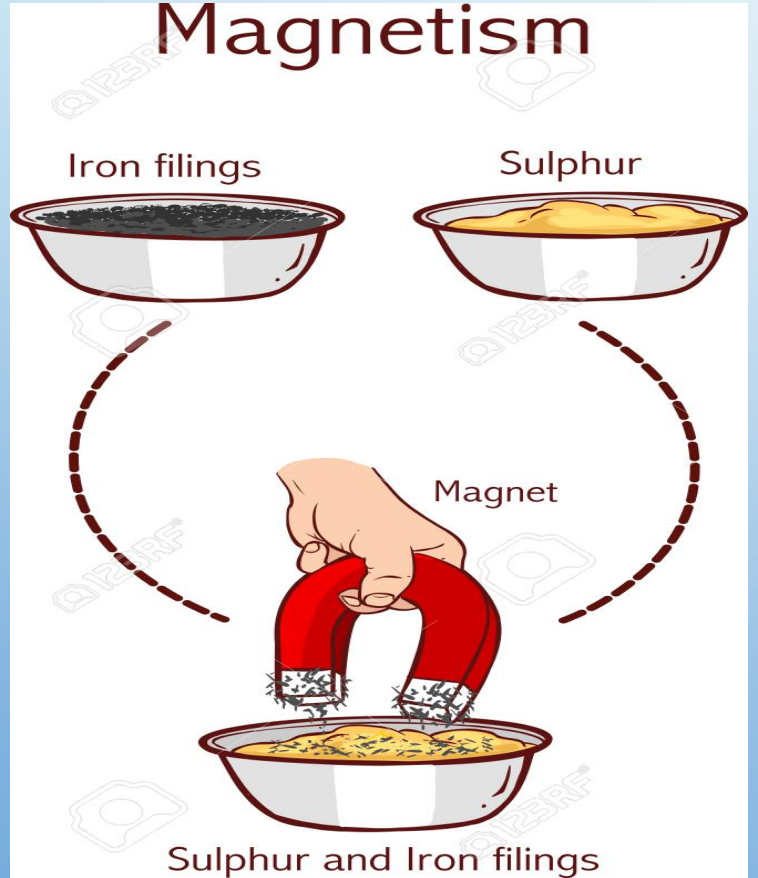
This method is used to separate those solid mixtures which have components of different sizes.

Small particles pass through the sieve while the big particles remain behind in the sieve.

Magnetic Separation

This method is used to separate iron from other components of a mixture. This method involves the use of a magnet.

For example, Iron fillings are separated from Sulphur powder. In factories , scrap iron is separated from the heap of waste materials.



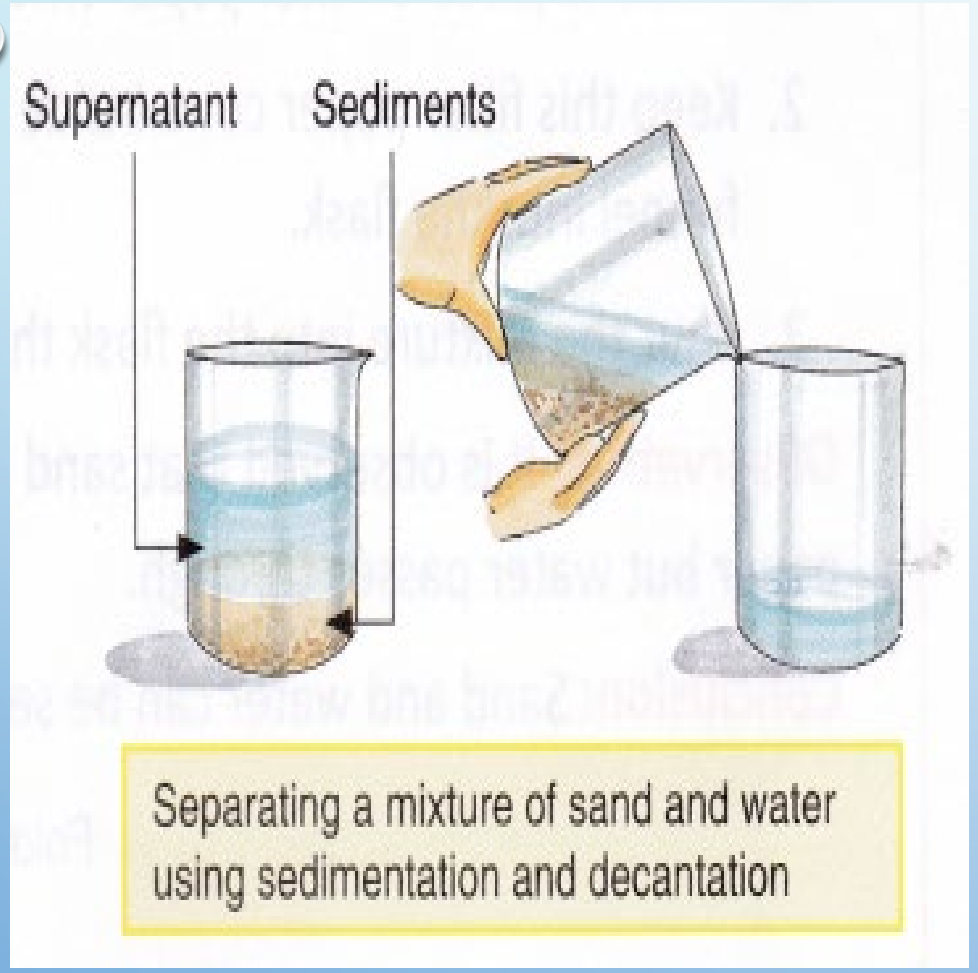
Sedimentation and Decantation

The solid matter which settles down at the bottom of a liquid is called **sediment**. And the deposition of solid matter at the bottom of a liquid is called **sedimentation.**

The pouring out of a liquid from a vessel without disturbing the sediment is called **decantation.**

The process of decantation can be used for separation only when the **solid** does not dissolve in the liquid.

This method can also be used for separating **two immiscible liquids.** However it cannot be used for separating two miscible liquids.



Separating a mixture of sand and water using sedimentation and decantation

Filtration

This method is used for separating **insoluble substances** from a liquid. This method involves the use of **filter paper.** In daily life, different kind of filters are used like **a wire mesh, strainer or a piece of cotton cloth.**

A mixture of two liquids cannot be separated by filtration.

It cannot remove any solid substances which are dissolved in a liquid.

Evaporation

Evaporation is used to obtain a solid substance that has dissolved in water. The dissolved substance is left as a solid residue when all the water has evaporated.

The common salt dissolved in water can be separated by the process of evaporation.

The process of evaporation is used on a large scale to obtain common salt from sea water.

The water that gets evaporated can not be recovered .

Distillation

The method which involves evaporation and condensation both is called Distillation.

In this method both salt as well as water, from a salt – water mixture can be recover.

Can water dissolve any amount of a substance?

A given quantity of water can dissolve only a certain maximum amount of a substance.

A solution in which no more substance can be dissolved at, that temperature is called a **saturated solution.**

Solubility- The maximum amount of a substance which can be dissolved in 100 grams of water at a given temperature, is known as the solubility of that substance in water at that temperature.

THANK YOU

CLASS 6th

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