



STEPPING STONE
SCHOOL (HIGH)

CLASS :8

Subject: CHEMISTRY

Date: 18/06/2020

Topic: ELEMENTS, COMPOUNDS AND MIXTURES

Time Limit: 60 MINUTES

Worksheet No.:12

GOOD DAY, CHILDREN

In the last worksheet I have discussed about the solid - solid separation and few solid - liquid separation of mixture. Today I am going to discuss about the other separations.

Evaporation

It is a process by which a liquid changes into vapour state by heating. This method is used to separate homogeneous solid - liquid mixture.
Ex: Salt from sea water.

Crystallisation

The process of separating a solid dissolved in a liquid to make a solution is called Crystallisation. It is done by warming the solution and allowing the solvent to evaporate thus leaving a saturated solution

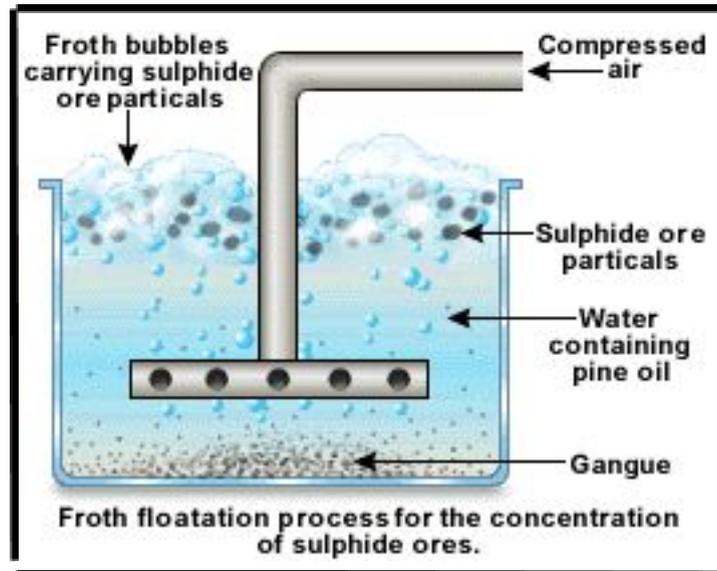
Ex: Sugar from water.

Froth floatation

It is based on the principle of preferential wet ability. In this process a suitable liquid is mixed with a mixture and compressed air is allowed to pass in the tank where ore is mixed with pine oil and water; a saponifying agent like potassium ethyl xanthate is added;

then the whole mass is agitated; hence the ore being lighter comes to the surface and gangue or the impurities settled down.

Ex: Used to concentrate sulphide ore.



Distillation

It is a process to separate a liquid from a soluble component by selective evaporation and condensation.

Ex: Used to obtain distilled water.

Centrifugation

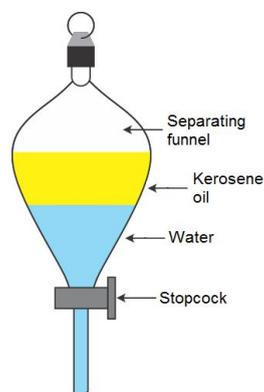
It is a process of separating finely suspended solid components in a liquid by spinning the mixture in a machine called centrifuge.

Ex: Used to separate butter from milk; blood cells from plasma.

3. LIQUID - LIQUID MIXTURE

a) Separating immiscible liquids – by using separating funnel. It is based on the principle to separate liquid which lighter floats above the heavier liquid.

Ex: To separate oil and water.



b) Separating miscible liquids –

1. **Fractional distillation** – the process of separating a mixture into its fractions by heating the mixtures. The principle is based on the difference in their boiling points where lower boiling points liquid evaporates faster than higher boiling point liquid.

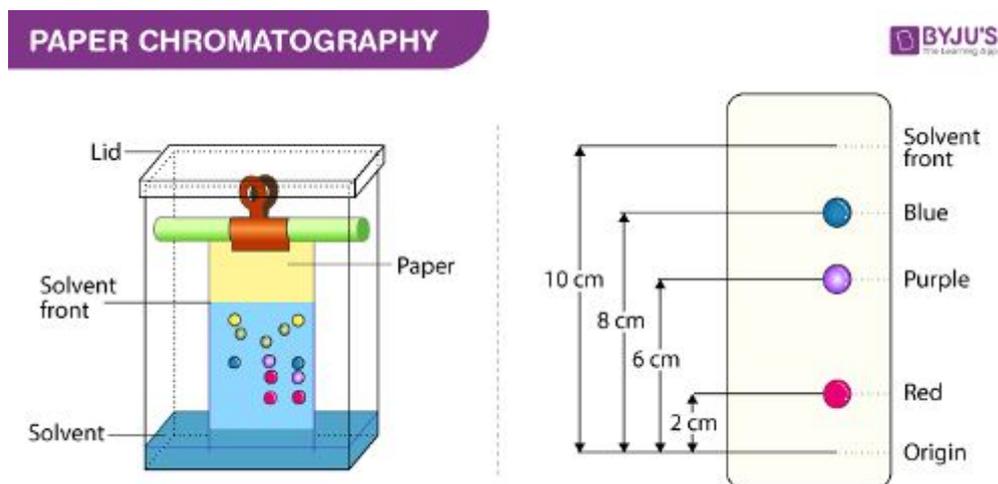
Ex: separation of crude oil into various components.

2. **Chromatography** – it is process of separating different component of a mixture by passing it through a medium in which the components move at different rates. The principle on which it is based is the difference the rates of absorption of various components of a mixture on the surface of a suitable adsorbent.

Commonly used adsorbent -- Filter paper and silica.

Commonly used solvent – Water; acetic acid and alcohol.

Ex: to separate mixture of ink.



Advantages of Chromatography:

- Chromatography can be used to separate very small quantities of a substance.
- It is used to identify various components of a mixture.
- It is an effective method to test the purity of a sample.
- Paper Chromatography is used to separate various dyes from a mixture.

Children after going through the worksheet answer the following questions:

1. What is principle behind distillation and centrifugation?
2. What is chromatography? Give two advantages.
3. What is a purpose of separating funnel?
4. Name two adsorbent.

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