SENIOR SECTION
DEPARTMENT OF CHEMISTRY
CLASS IX
LAB SHEET - III

SEPARATION OF DIFFERENT COMPONENTS IN A MIXTURE

Experiment No: …3…… Date: ……..

Objective: To separate the components of a mixture of sand, NaCl and NH_4Cl by sublimation, dissolution and filtration.

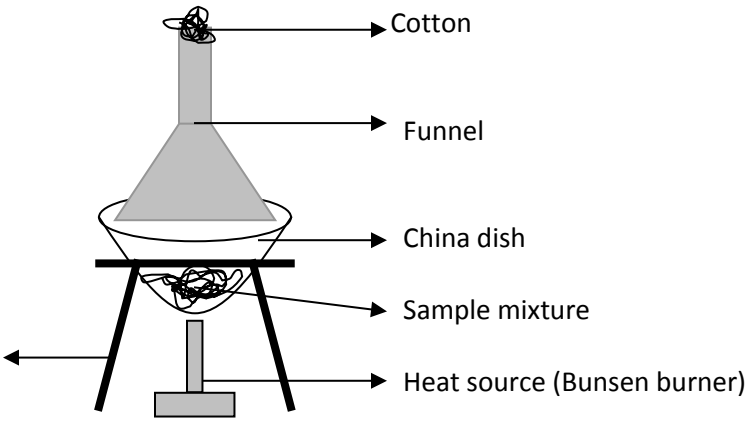
Requirements: Funnel, Wire gauze, China dish, tripod stand, Bunsen burner, cotton, beaker, test tubes, stirrer, filter paper, etc.

Separation techniques followed: Sublimation, filtration and evaporation.

Procedure:

Step 1

1. Take 3 spatulas of the given mixture in a china dish.
2. Cover the china dish using by placing a funnel as shown in the picture.
3. Close the open tail using a small piece of cotton.
4. Place the set up on a tripod stand and heat strongly.
5. Observe the changes and note them down in your observation note book.



Step 2

1. Cool the left over mixture from the first experiment.
2. Add 10ml of water to it and stir well.
3. Filter the solution using a funnel and filter paper. Collect the filtrate in a test tube.
4. Boil the filtrate in the test tube to remove water completely (Note: Stop heating the moment you see a white deposit at the side of the test tube)
5. Write also a concluding report on the experiment.

Precautions:

1. China dish and funnel should be clean and dry.
2. Start heating slowly and then make it strong.
3. Cool the china dish before adding water to it, otherwise it may break.

Report:

1. After heating we observed that Ammonium chloride gets separated as its sublimate, which is deposited in the funnel.
2. After boiling off water completely from the filtrate we observed that a white solid of sodium chloride get separated.

Questions:

1. How do you separate dissolved sugar from a solution of sugar in water?
2. What is filtration used for?
3. Suggest some methods of purification with examples.
4. What happens when NH_4Cl is heated in an open container? ($NH_4Cl_{(s)} \rightarrow HCl_{(g)} + NH_{3(g)}$)

5.What happens when NH_4Cl is heated in a closed container? ($HCl + NH_3 \rightarrow NH_4Cl_{(s)}$; This process is called sublimation

6.What is a sublimate? (The product obtained after the sublimation process is called a sublimate.)

7.When do we employ the technique of filtration to separate a component from a mixture? (One should dissolve in a suitable solvent)

8.When do we employ the technique of boiling/evaporation to separate a component from a mixture? (The substance dissolved does not undergo decomposition or evaporation)

Multiple choice type questions

1	After heating salt,ammonium chloride,&common salt for a few minutes,we observe the following on the upper part of the funnel a) A reddish brown ppt b) A white solid deposit c) Water droplets d) A yellow gas
2	A mixture consists of powdered chalk,sand,common salt & camphor.The component which can be separated just by heating is a) Chalk b) Common salt c) Sand d) Camphor
3	In a mixture of sodium nitrate &chalk ,the sodium nitrate can be recovered by the process of a) Filtration b) Sieving c) Decantation followed by filtration d) Dissolving in water followed by filtration & its evaporation
4	You are provided with a mixture of finely crushed sand, copper sulphate,& common salt.The components of the mixture which are visible to the unaided eye is /are a) Sand &copper sulphate b) Sand c) Copper sulphate &common salt d) Sand ,copper sulphate &common salt
5	A mixture containing iodine & sand is heated in a china dish so as to recover iodine from it. An inverted funnel is placed over the china dish a) After heating it b) Before heating it c) When fumes of iodine start coming out from the mixture d) When fumes of iodine stop coming from the mixture
6	A mixture of sand ,ammonium chloride & sodium chloride is dissolved in water & filtered The filtrate consists of a) Ammonium chloride b) Ammonium chloride&sodium chloride c) Sodium chloride d) Ammonium chloride & sand
7	Separation of sand from ammonium chloride depends on the physical property of: (CCE 2011) a) density b) volatality c) specific gravity d) melting point
8	Which among the following statements is incorrect about ammonium chloride? (CBSE CCE 2011) a) It is a solid at room temperature b) It directly changes into vapours on heating c) It is soluble in water d) It melts at room temperature and changes into a liquid.