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Puspa Shrestha

EXPERIMENT NO: 4

NAME OF EXPERIMENT: TO OBTAIN COMMON SALT IN PURE AND DRY STATE BY NEUTRALIZATION PROCESS

APPARATUS REQUIRED

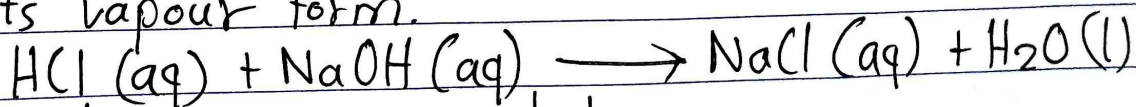
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|--------------------|---------------|--------------|
| 1. Porcelain basin | 2. Beaker | 3. Funnel |
| 4. Glass rod | 5. Wire gauge | 6. Test tube |
| 7. Stand | | |

CHEMICALS REQUIRED

1. Bench (dil.) HCl solution
2. Bench (dil.) NaOH solution
3. Silver nitrate (AgNO_3) solution.
4. Blue and red litmus paper

THEORY

Common salt can be obtained by neutralisation of bench hydrochloric acid with bench sodium hydroxide. It is obtained in dry and solid state by evaporating its aqueous solution. Neutralisation can be defined as the process in which an acid and a base react to give salt and water. Evaporation can be defined as the process of conversion of a liquid into its vapour form.



The reaction is ionic as below:

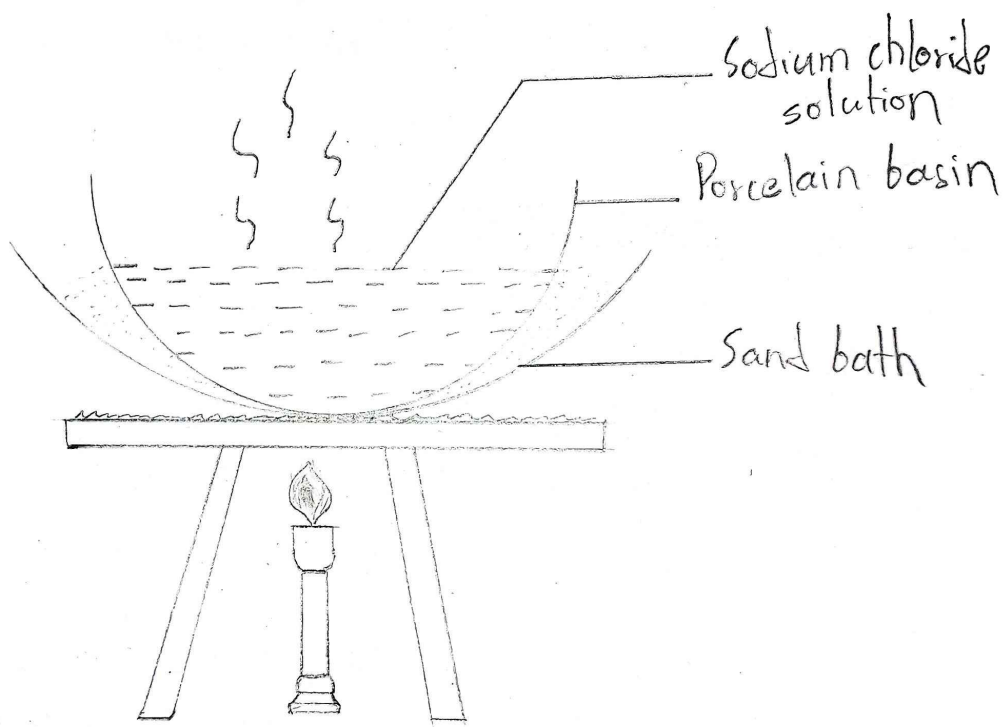
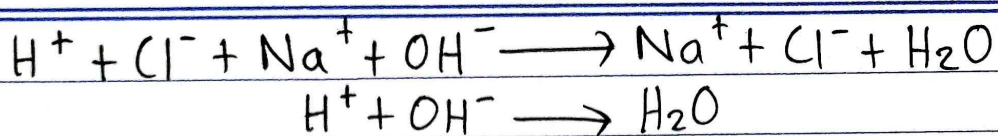


Fig. Evaporation of common salt solution.



Therefore, neutralisation can be defined as the formation of water molecule by the combination of H^+ ion from an acid and OH^- ion from the base.

PROCESS

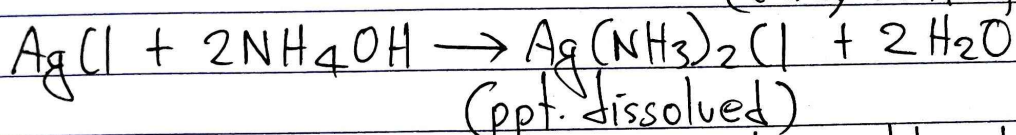
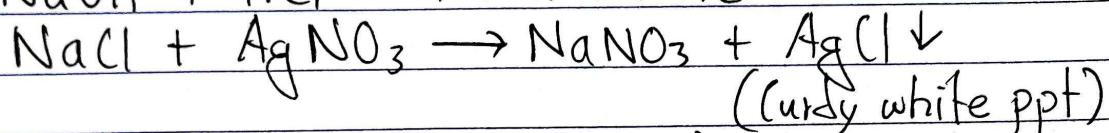
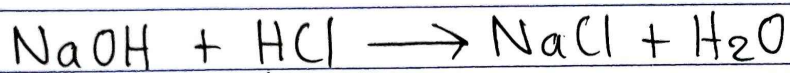
1. A half test ~~test~~ tube full of bench hydrochloric acid was taken in a porcelain basin.
2. A half test tubeful of bench sodium hydroxide was added a little at a time with the help of a glass tube.
3. The mixture was stirred constantly with a glass rod.
4. The mixture solution was introduced on the pieces of both red and blue litmus paper with the help of a glass rod.
5. If the blue litmus turned red, the alkali was introduced dropwise. Similarly, if the red litmus turned blue, the acid was introduced dropwise. In that way, the neutral point was ascertained by the trial-and-error method.
6. The solution was filtered and evaporated to get dry and solid sodium chloride.
7. A pinch of the common salt was taken in a test-tube and dissolved in water. Then a few drops of silver nitrate solution were added to the test tube. The curdy white precipitate was formed.

indicating the presence of chloride salt.

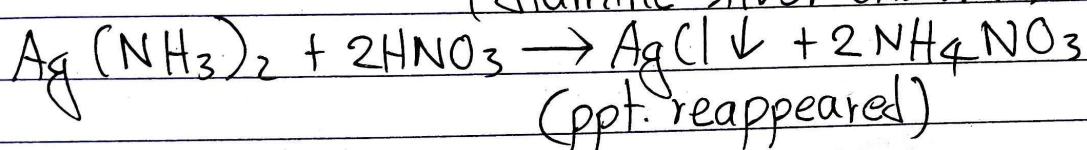
OBSERVATION TABLE

Experiment	Observation	Inference
1. A few drops of the mixture solution were introduced on blue and red litmus papers.	1. Blue litmus paper turned to red.	1. The solution was acidic.
2. After adding few drops of NaOH , a few drops of the mixture solution were again introduced on red and blue litmus papers.	2. Blue litmus was not affected but red litmus turned to blue.	2. The solution was basic.
3. After adding few drops of bench HCl , the mixture was introduced on blue and red litmus papers.	3. Both blue and red litmus papers were not affected.	3. The solution was neutral.
4. The salt solution was treated with a few drops of AgNO_3 solution.	4. Curdy white precipitate was formed.	4. Presence of ion chloride was observed.

REACTION INVOLVED



(diamine silver chloride)



RESULT

Common salt was obtained by neutralisation of bench HCl by bench NaOH followed by evaporation.

PRECAUTIONS

1. The mixture solution should be completely neutral.
2. All the glasswares should be handled with care.
3. Separate glass tubes should be used for acid and base bottles.

09/21