بِسۡمِ ٱللَّهِ ٱلرَّحۡمَٰنِ ٱلرَّحِيمِ

Practical of General Chemistry

Department :- Radiology Techniques

Class:1st year

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- Exp:. 3
- Name of experiment :. Determination of chloride as an insoluble salt of silver chloride
- Purpose of experiment: calculate the weight of chloride from the silver chloride precipitate.

Theory

- Precipitation reaction: It is the process of forming a solid object in a solution through a chemical reaction. When the reaction occurs in a liquid solution, the solid formed is known as a precipitate, and the reaction that leads to the formation of sediment is called a sedimentation reaction.
- Filtration: is a mechanical process that separates insoluble solids from fluids by placing a porous membrane called a filter that allows the fluid to flow and pass through the membrane pores, but does not allow solids to pass.

Tools and materials

1) Beaker.

2) Funnel flask.

3) Filter paper.

4) Balance.

5)oven

6) Silver nitrate (AgNO3).

7) Sodium chloride (NaCl).

Procedure

1. Prepare a solution of sodium chloride at any concentration.

2. Prepare a solution of silver nitrate with a concentration of 0.1 M.

3. Add the sodium chloride solution to the silver nitrate solution. A white color will appear and precipitate at the bottom of the

beaker, indicating the formation of a gelatinous white precipitate from silver chloride AgCl (s).

4. NaCl (aq) + AgNO3 (aq) Na+NO3- + AgCl (s) Wight precipitate

5. Separate the precipitate from the filtrate using a filter paper.

6. Dry the sediment and then weigh the sediment with a filter paper and neglect the weight of the filter paper to obtain the net weight of the sediment.

7. Use the equation to calculate the weight of chloride from the silver chloride precipitate.

$$\text{Weight of chloride (Cl)} = \text{weight of the precipitate} \times \text{gravimetric factor (GF)}$$

$$GF = \frac{\text{At.wt of chloride (Cl)}}{\text{M.wt of (AgCl)}}$$

Discussion

a) What is the purpose of adding table salt solution with silver nitrate solution? What happened?

b) Why was the precipitate dried?

c) Why do we weigh the precipitate with a filter paper and then weigh the filter paper while it is empty.



Filter paper with funnel flask



Beaker 250 ml