

Aim :-

To prepare and standardization of 0.1N of Sodium Carbonate.

Reference :-Requirement :-

- (a) Glassware :- Beaker, Measuring cylinder, Burette, Conical flask, stirring rod, funnel etc.
- (b) Chemicals :- Na_2CO_3 (Sodium carbonate),
 HCl (Hydrochloric acid),
Methyl red.
- (c) Apparatus :- Analytical weight Machine
Burette Stand
Spatulla

Theory :

Hydrochloric acid solution may be titrated against sodium carbonate solution using methyl orange indicator. When weak base is titrated with a strong acid solution is slightly acidic at end point. If a

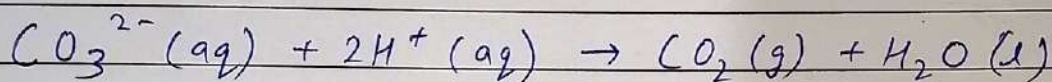
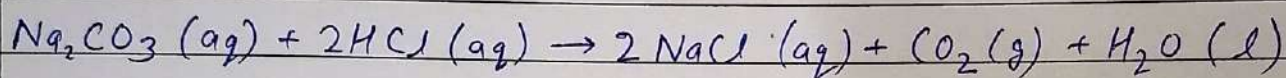
Observations

S.No.	Initial reading	Final reading	Volume consumed
1.	0	13.8	13.8
2.	13.8	28.6	14.8
3.	28.6	43.0	14.4

$$\text{Average} := \frac{13.8 + 14.8 + 14.4}{3} = \frac{43.0}{3} = \underline{14.3 \text{ ml.}}$$

Weak acid is titrated with a strong base the solution is slightly basic because the salt formed will be hydrolysed to a certain extent.

The chemical reactions involved in this titration is given below:



In acid base titration at the end point the amount of the acid becomes chemically equivalent to the amount of base present. In case of a strong acid and a strong base titration at the end point of solution the solution becomes neutral.

Procedure :-

- Weigh 0.26 gm of Na_2CO_3 with the help of weighing scale.
- Then take 50 ml of distilled water in beaker and to this add 0.26 gm of Na_2CO_3 .
- Mix the contents well by using a stirrer.
- Now, for standard solution, take 4.45 ml of HCl in 500 ml of distilled water.

- Put the 50 ml of dil. HCl solution in burette.
- Take 10 ml of Na_2CO_3 in a conical flask and add 2-3 drops of methyl red.
- Titrate the Na_2CO_3 solution with HCl and calculate the result.

Result:-

Preparation and standardization of 0.1 N of sodium carbonate performed successfully in laboratory.