

Aim :-

To prepare and standardization of 0.5N of NaOH (sodium hydroxide) solⁿ.

Reference :-Requizeement:

Glassware :- (i) Beaker

(ii) Measuring cylinder

(iii) Burette

(iv) Conical flask

(v) Stirring rod

(vi) Funnel

Chemicals :- (i) NaOH (sodium hydroxide)

(ii) $C_2H_2O_4$ (oxalic acid)

(iii) Methyl Red.

Apparatus :- (i) Analytical weight machine

(ii) Burette stand

(iii) Spatula

Observation table :-

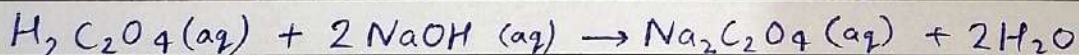
S.No	Starting point	End point	Volume consumed
1.	0.0	10.1	10.1
2.	10.1	21.1	11.1
3.	21.1	33.0	11.9

$$\text{Avg} = \frac{10.1 + 11.1 + 11.9}{3} = \frac{33}{3} = 11 \text{ ml}$$

Theory:

Titration is a laboratory technique that can be used to determine the concentration of certain solutions by chemical reactions. Any chemicals that reacts in solution can be titrated with each other. Since acids and bases are usually found in solution. They are commonly involved in titration.

It is an acid-base titration. The sodium hydroxide is an alkali whose strength changes over time and it can be effectively standardization utilizing primary standard viz. Sodium hydroxide, oxalic acid react with oxalic acid in the presence of phenolphthalein indicator. The colour change from pink to colourless at the end point. Hence, based on the above theory our aim is to prepare and standardise sodium hydroxide using oxalic acid.



A titration is a process in which a measured amount of a solution is reacted with a known volume of another solution (one of the solution has an unknown concentration) until a desired end point is reached. "(The End Point)" of a titration is the point in the titration at which an indicator d just changes colour to signal the stopping of the titration.

Procedure:

(i) Standard Sol:-

Preparation of 0.5 N solⁿ of oxalic acid:-

- (a) Wash and dry each glassware which are to be used in this experiment.
- (b) Add about 15.75 g of oxalic acid with condition.
- (c) Add about 100 ml of distilled water and allow it to cool at room temperature.
- (d) Make the volume upto 500 ml by adding distilled water.
- (e) Mix solⁿ thoroughly oxalic acid solⁿ and standardized it.

(ii) Sample solⁿ :- Preparation of sample solⁿ

- (a) Accurately w^t. about 3 gm of NaOH and dissolve it in 100 ml of distilled water.
- (b) Mix solⁿ thoroughly and allow it to cool at room temperature.

(c) Add 50 ml of standard solⁿ (oxalic acid) in burette.

(d) Take 10 ml of sample solⁿ (NaOH) in ~~control~~ conical flask and add 2 or 3 drop of indicator and titrate with standard solⁿ.

(e) To the production of permanent pink or red at end point.

Result:-

Standardized of 0.5 N of given solⁿ (sodium hydroxide).