PREPARATION OF SOLUTIONS

1. PREPARATION OF 100ml OF 0.1N SODIUM HYDROXIDE.

METHOD:

Titration method.

PRINCIPLE:

A concentrated solution of sodium hydroxide is titrated against 0.1N oxalic acid solution and the normality of sodium hydroxide solution is determined. The solution of sodium hydroxide is then diluted to get the desired normal solution.

APPARATUS:

Beaker, volumetric flask, conical flask, burette, burette stand, pipettes.

REAGENTS:

1. Sodium hydroxide (concentrated solution) [NaOH],
2. 0.1N Oxalic acid,
3. Phenolphthalein (indicator).

PROCEDURE:

To 2 or 3ml of concentrated solution of NaOH in a 100ml volumetric flask, add distilled water up to the 100ml mark. Mix well and fill the burette with this solution. Now take 10ml 0.1N oxalic acid in the titration flask and add 1 to 2 drops of phenolphthalein as an indicator. Titrate the contents of the titration flask with the NaOH solution in the burette until a persistent faint pink colour appears.

CALCULATIONS:

$$N_1V_1 = N_2V_2$$

N_1 is *normality of the acid,*
V_1 is *volume of the acid,*
N_2 is *normality of the base,* and
V_2 is *volume of the base.*

By applying the equation $N_1V_1 = N_2V_2$ find out the value for N_2.

Use the value for N_2 in place of N_S in the equation $N_SV_S = N_RV_R$, and calculate the volume required (V_R) for dilution

Where:

N_S stands for *"observed normality"*,
V_S is *"volume of prepared solution"* and
N_R stands for *"normality of required solution"*, and
V_R is the *"volume of the solution of required normality"*.

Now dilute the volume required with distilled water to make 100ml of NaOH solution of the desired normality.

EXPERIMENT No.: _____ Date: _____

TO PREPARE 100ml OF 0.1N SODIUM HYDROXIDE SOLUTION.

OBSERVATIONS:

No.	Initial Burette Reading	Final Burette Reading	DIFFERENCE (Volume used)
1.	0ml	5·5ml	5·5ml
2.	5·5 ml	13·5ml	8ml
3.	13·5ml	20·5ml	7ml
		Mean Volume Used =	

CALCULATIONS:

Normality of oxalic acid, N_1 = 0·1 N

Normality of sodium hydroxide, N_2 = ?

Normality of acid, V_1 = 10ml.

Volume of sodium hydroxide V_2 = 7ml

By using formula

$$N_1V_1 = N_2V_2$$

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Putting the values

$$(0·1)(10) = N_2(7)$$

$$N_2 = \frac{1}{7} = 0·1 \cdot N$$

Result

Normality of NaOH = 0·1 N