

C 141 (Expt. No. 9)

NAME : _____ BATCH : _____

ROLL No. : _____

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ESTIMATION OF ACID STRENGTH IN A CITRUS FRUIT

AIM

To estimate the acid strength in a given citrus fruit (lemon).

THEORY

The acid in the citrus fruit (lemon) can be determined by titration against NaOH (which has been standardized against standard oxalic acid). This is a typical example of a titration between a weak acid and a strong base, using phenolphthalein as indicator.

MATERIALS REQUIRED

Lemon juice (freshly prepared), oxalic acid, sodium hydroxide solution, phenolphthalein, burette, pipettes, conical flasks.

PROCEDURE

PART - I

1. Standard solution of Oxalic Acid is given.

Strength of Oxalic Acid = N

2. Determine the strength of NaOH solution, by titration against standard oxalic acid solution, using phenolphthalein as indicator.

Report your results (Table 1).

PART - II

1. Pipette out **2 ml** of the lemon juice (**freshly prepared**), add **25 ml of distilled water**, and titrate **against the NaOH** solution (**standardized in Step 1**), using phenolphthalein (2 drops) as indicator.
2. Determine the strength of acid present in lemon juice.

Report your results (Table 2).

OBSERVATIONS

Table 1. Standardization of NaOH solution

Volume of oxalic acid used = 10 ml

Sl. No.	Initial Reading (ml)	Final Reading (ml)	Titre Value (ml)
1.			
2.			
3.			

$$\text{Strength of NaOH} = \frac{V_{\text{acid}} \times S_{\text{acid}}}{V_{\text{NaOH}}} =$$

Table 2. Determination of strength of acid (lemon juice)

Volume of lemon juice taken = 2 ml

Sl. No.	Initial Reading (ml)	Final Reading (ml)	Titre Value (ml)
1.			
2.			
3.			

$$\text{Strength of acid in lemon juice} = \frac{V_{\text{NaOH}} \times S_{\text{NaOH}}}{V_{\text{acid}}}$$

=

RESULTS

Strength of NaOH = N

Strength of acid in lemon juice = N