

EXERCISE 17

ACETIC ACID

PERCENT OF ACETIC ACID IN WHITE VINEGAR

Objective:

1. To determine the percent of acetic acid in white vinegar.
2. To develop further skill in using volumetric glassware.

The percent of acetic acid in vinegar can be determined by titrating a sample of the vinegar with standard NaOH. The student may use the standard NaOH prepared in exercise 15.

Equipment:

1. buret
2. 5 ml volumetric pipet
3. Erlenmeyer flasks

Procedure:

- 1a. Using the standard base you prepared (exercise 15) fill a clean buret: make sure the tip of the buret is also full.
- b. Record the initial reading of the buret.
2. Pipet a 5 ml sample of the vinegar into a clean 250 ml Erlenmeyer flasks. (You may dilute your sample) Now add 3 or 4 drops of phenolphthalein indicator and titrate the samples with the standard NaOH until the end point is reached.
3. Calculate the normality of acetic acid.

$$N_A \text{ ml}_A = N_B \text{ ml}_B$$

4. Using equation: $\text{g HOAc} = \frac{(N)(\text{ml})(\text{eq. wt. of HOAc})}{1000}$

Calculate the grams of acetic acid in 5 ml. of vinegar.

5. Calculate the percent acetic acid in vinegar (assume the density of vinegar to be one).
6. Obtain the percent of acetic acid in vinegar from your instructor.
7. Calculate the percent error and show all your calculations.

EXERCISE 17

ANSWER SHEET

NAME _____ SECTION _____

DATE _____

	<u>1st Determination</u>	<u>2nd Determination</u>
1a. Normality of NaOH	_____	_____
b. Final buret reading	_____	_____
c. Initial buret reading	_____	_____
d. Volume of base	_____	_____
2. Volume of vinegar	_____	_____
3. Normality of vinegar	_____	_____
4. Grams of acetic acid in 5 ml of solution	_____	_____
5. Percent acetic acid	_____	_____
6. Accepted percent of acetic acid	_____	_____
7. Percent error	_____	_____