Chemistry 11

Lab: Acid-Base Titration

Name:

Block:

For Students:	For Teacher:
Lab performed:	Pre-lab completion: ☐ Yes ☐ No
Lab due:	Lab Submitted: ☐ On Time ☐ Late

Introduction:

Titration is a very important laboratory technique which is used to determine the concentration of a wide variety of chemical substances. A standard solution (one of known molarity) is titrated against (reacted with) another solution in such a manner that the concentration of the second solution may be calculated from the results.

The second solution is added to a known volume of the first solution by means of a burette, which allows the volume of solution delivered to the reaction vessel to be accurately determined.

A chemical indicator is used to show when the reaction is complete.

After reading through the procedure, list the chemicals in the space below.

- **Standardized solution:**
- **Unknown solution:**
- **Indicator:**

Pre-lab calculation:

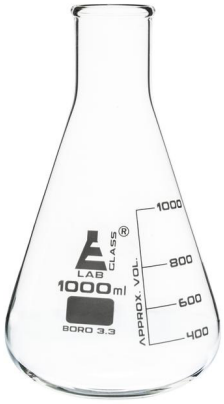
Calculate the *approximate* mass of sodium hydroxide needed to make a 250.0 mL of 0.50M NaOH solution in the space below:

Objectives:

1.

2.

Equipment Used:



Procedure:

Experimental Results:

Mass of NaOH actually used to make standardized solution: _____

[NaOH]:

Titration #1: Vinegar (Acetic acid) _____ mL

	Trial 1	Trial 2	Trial 3	Trial 4 (if necessary)	Trial 5 (if necessary)
Initial reading of burette (mL)					
Final reading of burette (mL)					
Total Volume of NaOH used					
Notes:					

Analysis of Results:

1. Write out the balanced formula equation for the titration reaction of $CH_3COOH_{(aq)}$ with $NaOH_{(aq)}$.

2. Calculate the average volume of NaOH used.

3. Calculate the molarity of the acetic acid solution.