Titration Lab

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Background:

Titration consists of the gradual addition of a standard solution (of known concentration) to a measured quantity of a solution of unknown concentration until the number of equivalents (moles in our titration) of each solute is the same.

MAVA=MBVB

Purpose: To determine the concentration of acetic acid in vinegar

Vinegar Analysis:

1. Measure 3mL of vinegar to a clean Erlenmeyer flask and add 2-5 drops of phenolphthalein. Then add 20 mL of water.
2. Place the Erlenmeyer flask on top of a white piece of paper.
3. Fill the graduated cylinder with NaOH solution to the 50 mL mark.
4. Slowly add the NaOH dropwise to the Erlenmeyer flask.
5. Be sure to swirl the flask after each addition
6. Continue to add NaOH until the solution turns **light pink.**
7. Record the amount of NaOH used to reach this point.
8. Repeat steps 1-7 for trial 2

Data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Initial Volume of Base | Final Volume of Base | Total Volume of Base | Volume of Acid | Molarity of Base |
| Trial 1 |  |  |  |  |  |
| Trial 2 |  |  |  |  |  |

|  |
| --- |
|  |

 Average

 Volume=

Using the equation at the top of the page, determine the molarity of the acid. (use the average volumn)

Molarity of the acid= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_M