**Name:**

**Titration Lab Makeup Assignment**

**Purpose:** Your purpose is to determine the concentration of acid in a sample of Vinegar (Acetic Acid).

**Procedure:**

1. Use the formula below and the volumes listed in the table to calculate the concentration of the Acetic Acid in the vinegar. The Vinegar was titrated with 0.1 M NaOH (this is the concentration of the base).
2. Calculate the average concentration (Molarity) determined in the 3 titrations.
3. Answer the Post-Lab questions.

**Formula:** Ma x Va = Mb x Vb

*Ma = Molarity of Acid Va = Volume of Acid (5 mL)*

*Mb = Molarity of Base (0.1M) Vb = Volume of Base*

|  |  |  |
| --- | --- | --- |
| Titration | Volume of Base (NaOH) Used | Calculated  Molarity of Vinegar |
| #1 | 42 mL |  |
| #2 | 40.2 mL |  |
| #3 | 41.5 mL |  |
| **AVERAGE MOLARITY OF VINEGAR** | |  |

**Post-Lab Questions:**

1. How do you neutralize an acid?
2. In a titration, 20.00 mL of phosphoric acid, H3PO4 (with a molarity of 0.345 M) is titrated against a sample of Ca(OH)2. If the reaction requires 22.25 mL of base to reach the final endpoint, what is the molarity of the calcium hydroxide?