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

**Experiment 1: Acid Base Titrations**

**Aim:**

**Procedure:** The procedure was as given in the laboratory manual. (Make a note here of any deviations from the procedure, and of any observations you made.)

**Standardisation of NaOH**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Trial** | **Analysis 1** | **Analysis 2** | **Analysis 3** |
| Mass of weighing bottle + KHP |  |  |  |  |
| Mass of weighing bottle / g |  |  |  |  |
| Mass of KHP taken / g |  |  |  |  |
| Moles of KHP |  |  |  |  |
|  |  |  |  |  |
| Initial burette reading, mL |  |  |  |  |
| Final burette reading, mL |  |  |  |  |
| Volume of NaOH used, mL |  |  |  |  |
| [OH-] mol L-1 |  |  |  |  |
| Mean [OH] mol L-1+ stats |  |  |  |  |
| **Titration of samples** |  |  |  |  |
|  |  |  |  |  |
| Initial burette reading, mL |  |  |  |  |
| Final burette reading, mL |  |  |  |  |
| Volume of NaOH used / mL |  |  |  |  |
| moles CH3COOH |  |  |  |  |
| [CH3COOH] mol L-1 aliquot |  |  |  |  |
| [CH3COOH] mol L-1  vinegar |  |  |  |  |
| [CH3COOH] m/v% vinegar |  |  |  |  |
| Mean [CH3COOH] mol L-1+ stats |  | | | |

**Comprehension questions:**

1. Why is standardisation of NaOH important?

1. Generally, during acid-base titrations, the water is boiled and cooled to room temperature just before solutions are made up. Explain why this is done?
2. The transition region for thymol blue is from pH 8.0 to 9.6. This indicator is used in this titration of a weak acid by a strong base. Will this indicator be adequate for the titration of a strong acid by a strong base? Explain.
3. Discuss your results in terms of accuracy and precision.
4. Calculate the 95 % confidence interval for your %acetic acid.

1. Describe why KHP is a suitable primary standard acid. List its attributes.
2. Why is NaOH not a good primary standard?