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Titration Lab Report

PART A: MAKING A SODIUM HYDROXIDE SOLUTION FORM SOLID NaOH

- 1. Ask your teacher for the concentration of NaOH that you are to make ($C_{\text{NaOH}} =$ _____ M)
- 2. Show a calculation for the mass of NaOH required to make 100 mL of solution at your assigned concentration. Please include significant digits

3. Make your solution as per the teachers instructions and store as required.

PART B: TITRATION OF NaOH AGAINST 0.1 M HCl

- 4. Clean and set up a single burrett titration station as described by your teacher. Use 0.1 M HCl as your <u>titrant</u> (solution in the burrett that you titrate with).
- 5. Carefully measure out a 25 mL aliquot of your NaOH solution for use as the analyte. Use bromothymol blue as the indicator. Be sure to use white paper to aid in colour determination.
- 6. Titrate with HCl and record your observations. Repeat as time permits.

	Volume of NaOH Analyte	Volume of 0.1 M HCl Titrant
Trial #1	25 mL	
Trial #2	25 mL	
Trial #3	25 mL	
Trial #4	25 mL	

7. Omit any "poor" results from the above trials and average the rest (i.e using a three line calculation, add all "good" titrant volumes together and divide by the number of trials that you are averaging.

- 8. Write a balance neutralization reaction for this titration.
- 9. Using the titration equation and a data table, determine the concentration of your NaOH solution as determined by the titration. This will involve one calculation that uses the average titrant from above.

10. Using a three line calculation, determine the percentage difference between the concentration of what you NaOH solution should be according to how you made it, versus what the titration is telling you. Use the term "expected concentration" for what you expect the concentration to be according to how you made the solution and use the term "actual value" for what the titration calculation tells you