

SCH3U - Unit 4 Activity 3 Assignment 3 - Humza Khokhar

Name of Acid: acetic acid (CH_3COOH)

Name of Base: sodium hydroxide (NaOH)

Name of Indicator: phenolphthalein ($\text{C}_{20}\text{H}_{14}\text{O}_4$)

Molar Concentration of Acid: $C_A = 0.2074 \text{ M}$

Volume of Acid: $V_A = 25.00 \text{ mL}$

Volume of Base: $V_B = 20 \text{ mL} = 0.02 \text{ L}$

$$C_B = \frac{0.025 * C_A - 10^{-7} * (0.025 - V_B)}{V_B}$$

$$C_B = \frac{0.025 * 0.2074 \text{ M} - 10^{-7} * (0.025 - 0.02 \text{ L})}{0.02 \text{ L}} = 0.259249975 \approx 0.259 \text{ M}$$

The screenshot shows a web-based titration simulation interface. The title is "Determination of the Molarity of an Acid or Base Solution". The interface is divided into several sections:

- 1. Select Type of Reaction:** Radio buttons for "Strong Acid vs. Strong Base" and "Weak Acid vs. Strong Base". The "Weak Acid vs. Strong Base" option is selected.
- 2. Fill the Burette with:** Radio buttons for "Acid" and "Base". The "Base" option is selected.
- 3. Select the Acid and Base:** A table with "Acid" and "Base" columns. Under "Acid", CH_3COOH is selected. Under "Base", NaOH is selected.
- 4. Select the Indicator:** Radio buttons for "Methyl Orange" and "Phenolphthalein". The "Phenolphthalein" option is selected.
- 5. Push Slider Up to Add a Volume of Base:** A slider bar with a value of 20 ml.
- 6. After Titration, Calculate and Enter Molarity of Base:** A text input field containing 0.259 M.
- Buttons:** "OK", "Correct", "Concordant Values", "Graph", and "Reset".
- Visuals:** A burette and a conical flask containing a solution.

The bottom of the screen shows a Windows taskbar with the date and time: 9:40 PM, 2019-07-21.

References

Acetic acid. (n.d.). Retrieved from <https://pubchem.ncbi.nlm.nih.gov/compound/Acetic-acid>

Phenolphthalein. (n.d.). Retrieved from

<https://pubchem.ncbi.nlm.nih.gov/compound/Phenolphthalein>

Sodium hydroxide. (n.d.). Retrieved from

<https://pubchem.ncbi.nlm.nih.gov/compound/Sodium-hydroxide>