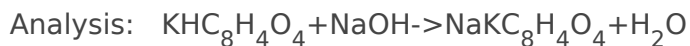


Page 24



Trial 1:

$$10.00\text{mL} - 0.20\text{mL} = \underline{9.80\text{mL NaOH used}}$$

$$2.00\text{g} / (39.10 + 1.008 + 8 \cdot 12.01 + 4 \cdot 1.008 + 4 \cdot 10.00) \cdot (1/1) \cdot (9.80/1000) = 0.999 \sim \underline{1.00\text{M}}$$

Trial 2:

$$19.70\text{mL} - 10.00\text{mL} = \underline{9.70\text{mL NaOH used}}$$

$$2.00\text{g} / (39.10 + 1.008 + 8 \cdot 12.01 + 4 \cdot 1.008 + 4 \cdot 10.00) \cdot (1/1) \cdot (9.70/1000) = \underline{1.01\text{M}}$$

Trial 3:

$$29.40\text{mL} - 19.70\text{mL} = \underline{9.7\text{mL NaOH used}}$$

$$2.00\text{g} / (39.10 + 1.008 + 8 \cdot 12.01 + 4 \cdot 1.008 + 4 \cdot 10.00) \cdot (1/1) \cdot (9.70/1000) = \underline{1.01\text{M}}$$

Trial 4:

$$39.15\text{mL} - 29.40\text{mL} = \underline{9.75\text{mL NaOH used}}$$

$$2.00\text{g} / (39.10 + 1.008 + 8 \cdot 12.01 + 4 \cdot 1.008 + 4 \cdot 10.00) \cdot (1/1) \cdot (9.75/1000) = \underline{1.00\text{M}}$$

Trial 5:

$$48.85\text{mL} - 39.15\text{mL} = \underline{9.70\text{mL NaOH used}}$$

$$2.00\text{g} / (39.10 + 1.008 + 8 \cdot 12.01 + 4 \cdot 1.008 + 4 \cdot 10.00) \cdot (1/1) \cdot (9.70/1000) = \underline{1.01\text{M}}$$

Average Molarity:

$$(1.00\text{M} + 1.01\text{M} + 1.01\text{M} + 1.00\text{M} + 1.01\text{M}) / 5 = 1.006 \sim \underline{1.01\text{M on average}}$$

% Deviation:

$$(1.01 - 1.00) / 1.01 \cdot 100 = \underline{0.990\% \text{ deviation}}$$

Conclusion:

The purpose of the lab was to determine the molarity of an NaOH solution by reacting KHP with NaOH and getting as close to the endpoint as possible. We achieved this purpose by

takings the before and after volume of the NaOH to when the endpoint is reached or passed, the difference of which was used to calculate the molarity of the NaOH solution. On average, 9.7mL was too far, though 9.75mL was used to get a near perfect titration. We got an average molarity of 1.01M NaOH. The target was about 1.00M.

Revision #1

Created 2025-11-26 07:58:18 UTC by Admin

Updated 2025-11-26 07:58:18 UTC by Admin