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Analysis: $KHC_8H_4O_4+NaOH->NaKC_8H_4O_4+H_2O$

Trial 1:

10.00mL-0.20mL=9.80mL NaOH used

2.00g/(39.10+1.008+8*12.01+4*1.008+4*10.00)*(1/1)*(9.80/1000)=0.999~1.0M

Trial 2:

19.70mL-10.00mL=9.70mL NaOH used

2.00g/(39.10+1.008+8*12.01+4*1.008+4*10.00)*(1/1)*(9.70/1000)=1.01M

Trial 3:

29.40mL-19.70mL=9.7mL NaOH used

2.00g/(39.10+1.008+8*12.01+4*1.008+4*10.00)*(1/1)*(9.70/1000)=1.01M

Trial 4:

39.15mL-29.40mL=9.75mL NaOH used

2.00g/(39.10+1.008+8*12.01+4*1.008+4*10.00)*(1/1)*(9.75/1000)=1.00M

Trial 5:

48.85mL-39.15mL=9.70mL NaOH used

2.00g/(39.10+1.008+8*12.01+4*1.008+4*10.00)*(1/1)*(9.70/1000)=1.01M

Average Molarity:

(1.00M+1.01M+1.01M+1.00M+1.01M)/5=1.006~1.01M on average

% Deviation:

(1.01-1.00)/1.01 *100=0.990% 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 enpoint 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.

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