



- Dissolve Alka-Seltzer tablet in beaker.
- Titrate beaker with HCl while monitoring the solution's pH with the pH meter.
- Measure the volume of the HCl it takes to cause a tipping point in the pH of the Alka-Seltzer solution (to a very low pH~1).
- From the data generated, calculate the Cation Exchange Capacity of the buffer solution.

Additional facts:

- By viewing the ingredients label, we observe that each tablet of Alka-Seltzer contains 1,000 mg of citric acid and 1,940 mg of sodium bicarbonate. From the stoichiometry of the second equation above, one can calculate that 1,344 mg of sodium citrate is produced.
- This weight of sodium citrate is equivalent to 0.052 moles (gram molecular weight).
- The equation shows that 3 moles of HCl react with 1 mole sodium citrate to produce 1 mole of citric acid. Thus, each tablet of Alka-Seltzer consumes 0.156 moles of  $H^+$ , which equals 156 mg of  $H^+$ .