

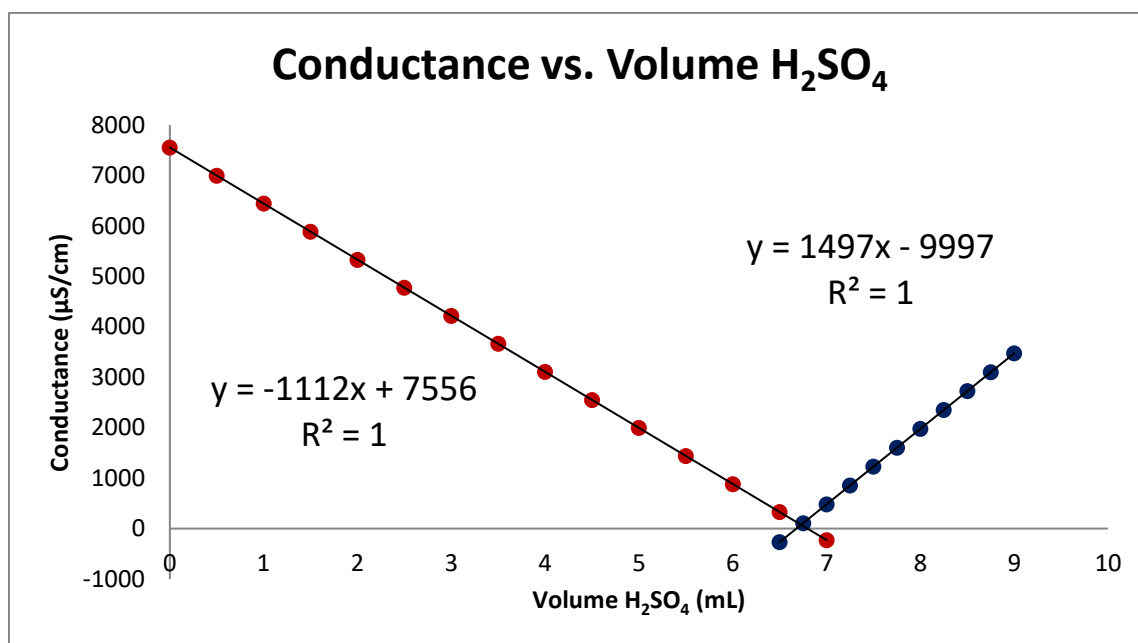
## Conductometric Titration and Gravimetric Determination of the Precipitate

Data:



Volume of  $\text{Ba(OH)}_2$  : 25.00 mL

Concentration of  $\text{H}_2\text{SO}_4$  : 0.1044 M



1. Use the above graph, and the equations of the two lines to determine the volume of  $\text{H}_2\text{SO}_4$  to reach the equivalence point, and then determine the molarity of the  $\text{Ba(OH)}_2$  solution titrated.

(Hint: At the equivalence point, the (x,y) values are equal for both lines)

a. Volume of  $\text{H}_2\text{SO}_4$  needed to reach the equivalence point:

b. Moles of  $\text{H}_2\text{SO}_4$  used:

- c. Moles of  $\text{Ba}^{2+}$  precipitated:
- d. Molarity of  $\text{Ba}(\text{OH})_2$  solution:

	Trial 1	Trial 2	Trial 3
Mass of Filter Paper (g)	1.310	1.266	1.289
Mass of precipitate plus filter paper (g)	1.462	1.420	1.444
Mass of precipitate (g)			

2. Use the above data to determine the mass of the precipitate ( $\text{BaSO}_4$ ) for each of the trials, and then determine the number of moles of  $\text{BaSO}_4$  for each trial.
3. Determine the number of moles of  $\text{Ba}(\text{OH})_2$ , and then the molarity of the  $\text{Ba}(\text{OH})_2$  solution.
4. What is the average and standard deviation?
5. Are these values precise?

6. What caused the data in the actual lab we did to only show an increase in conductance?

7. Write the balanced reaction that occurs when sulfuric acid and sodium bicarbonate are mixed?