Lab Report for Gravimetric Analysis

Data and Observations

1. Unknown number

2. Mass of 250 mL beaker

3. Mass of 250 mL beaker and unknown sample

4. Mass of unknown sample

5. Mass of crucible

6. Mass of crucible and barium sulfate

7. Mass of barium sulfate

Calculations

1. Calculate the mass of sulfate in the unknown sample. You must clearly demonstrate each step of your calculation.

2. Calculate the percentage (by mass) of sulfate in the unknown sample.
3. The cation in your unknown is one of the following.

   \[ \text{Na}^+, \text{K}^+, \text{Mg}^{2+}, \text{NH}_4^+ \]

   Determine which of these cations is present in your unknown. You must show all of your work.
Questions and Conclusions

1. Explain why it is essential that you add an excess of barium chloride to the mixture containing the unknown sulfate salt.

2. The metal sulfate samples (the unknowns) may absorb water from the atmosphere. For this reason they are placed in desiccators in order to remove any absorbed water. How might your calculated value for the percentage of sulfate be affected if the sample were not desiccated? Explain your answer.