

Friday Worksheet

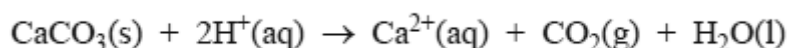
Name:

Gravimetric 2

The strength of the eggshell of birds is determined by the calcium carbonate, CaCO_3 , content of the eggshell.

The percentage of calcium carbonate in the eggshell can be determined by gravimetric analysis.

0.402 g of clean, dry eggshell was completely dissolved in a minimum volume of dilute hydrochloric acid.



An excess of a basic solution of ammonium oxalate, $(\text{NH}_4)_2\text{C}_2\text{O}_4$, was then added to form crystals of calcium oxalate monohydrate, $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$.

The suspension was filtered and the crystals were then dried to constant mass.

0.543 g of $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ was collected.

a. Write a balanced ionic equation for the formation of the calcium oxalate monohydrate precipitate.

b. Determine the percentage, by mass, of calcium carbonate in the eggshell.