

Oxiclean Analysis Inquiry Lab Problem

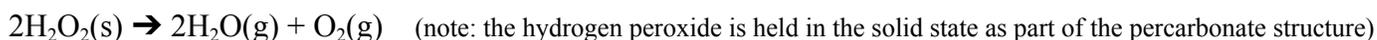
NAME:

Background (Copy or Summarize IN NOTEBOOK)

A particular household stain remover is composed of the following two primary components:

Sodium carbonate (Na_2CO_3) and sodium percarbonate ($2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$)

In this experiment, the percent composition of the stain remover will be determined by the heat-induced decomposition of the mixture and subsequent stoichiometric analysis using mass data. The following chemical reactions show how direct heating affects each component of the mixture:



Equipment and Materials

2.00 g of stain remover powder	crucible with lid	lab burner and igniter
electronic balance	crucible tongs	ring stand, ring clamp, clay triangle
scoopula	glass stir rod	spatula

Student Developed Procedure (IN NOTEBOOK)

HINTS: You may want to do multiple trials (**share with other groups?**) from your initial 2.00 g sample as this is your total supply; **Use 1.00 gram sample Heat 30 sec; Cool 1 min; weigh - Repeat to constant mass**

Sample Data Table (IN NOTEBOOK)

Observations

Calculations and Conclusions (IN NOTEBOOK)

Show all the calculations used to experimentally determine the percent of both sodium carbonate and sodium percarbonate in the stain remover (see organizational steps below). Explain/annotate each calculation (how does it help you get to the percent composition of each component?).

1) Mass of hydrogen peroxide present in the initial sample.

2) Mass of sodium percarbonate present in the initial sample.

3) Mass of pure sodium carbonate present in the initial sample (excluding sodium percarbonate contribution).

4) Percentages of sodium carbonate and sodium percarbonate initially in Oxi-Clean.

Error Analysis

Use step-by-step / cause and effect analysis of the following error to explain how it would affect the experimental result:

If some impurity thermally decomposed in addition to hydrogen peroxide, how would the percent composition of sodium carbonate be affected?

Your lab report should be completed in the lab notebook and submitted by the end of the lab period.