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Decomposition of sodium bicarbonate lab report

Decomposition of sodium bicarbonate. Decomposition reaction of sodium bicarbonate. Decomposition of baking soda lab. Decomposition of baking soda lab conclusion. Decomposition of sodium bicarbonate lab answers. What does nahco3 decompose into. Decomposition of baking soda lab report. What does sodium bicarbonate decompose into.

Experiment: Thermal Decomposition of Sodium Bicarbonate As a bot-checking system flagged your browser activity, we've noticed you're likely experiencing issues due to either super-human browsing speed or disabled cookies in your web browser. A third-party plugin could also be blocking JavaScript from running. For more info, check out our support article. To regain access, ensure that cookies and JavaScript are enabled before reloading the page. **Student Information:** Name: _____ Date: _____ Report Submitted: _____ Student ID: _____ Experiment Number and Title: Thermal Decomposition of Sodium Bicarbonate Section 1: Purpose and Summary - Determine which reaction occurs when sodium bicarbonate is heated: Reaction A or Reaction B. Reaction A: Sodium bicarbonate → Sodium carbonate + Water vapor + Carbon dioxide Reaction B: Sodium bicarbonate → Sodium oxide + Water vapor + Carbon dioxide NaHCO3(s) → Na2CO3(s) + H2O(g) + CO2(g) NaHCO3 is commonly known as sodium bicarbonate. Heating it above 110 °C produces H2O and CO2, causing a chemical change. After the reaction, a white solid residue remains. Between Reaction A and B, students must choose based on their lab work. This involves heating a weighed sample of sodium bicarbonate in a crucible and weighing the residue left after heating. By determining the mass of the product (residue), students can decide if it's Na2CO3 or Na2O. Section 2: Safety Precautions and Waste Disposal - Safety Precautions: - Wear safety goggles. - Do not move a hot crucible; let it cool first. - Use care when handling HCl solutions. If HCl splashes on your skin or clothing, rinse it off immediately with plenty of water. - Waste Disposal: The solid waste can be discarded in one of the regular garbage cans. Section 3: Procedure Part 1: Clean and Weigh Crucible - Obtain a clean crucible without cracks. Place it in a clay triangle on a ring attached to a stand, ensuring it hangs securely. - Put the lid on. Heat the crucible and lid for 10 minutes with a high flame until the bottom glows red hot. Let it cool. Part 2: Measure Mass of Residue after Heating - Add sodium bicarbonate until the crucible is 3/4 full. - Weigh the crucible, NaHCO3, and lid. Record this mass in the data table below. - Obtain the mass of the sodium bicarbonate by subtraction: Mass of NaHCO3 = Mass of crucible, lid, and NaHCO3 - Mass of crucible and lid Using a medium-sized flame, heat the sample for 15 minutes without heating it red hot. Cool it in place, then weigh it. Record the mass of the crucible, lid, and residue in the data table below. To calculate the mass of residue remaining, subtract the mass of crucible and lid from the mass of crucible, lid, and residue. Record the results in the data table below. ####Data Table Before Heating After First Heating After Second Heating After Third Heating Mass of Crucible, Lid & Sample (g) _____ _____ _____ _____ Mass of Crucible & Lid (g) _____ _____ _____ _____ Mass of Residue (g) _____ _____ _____ _____ Heat the sample for 10 minutes, then cool and weigh as before. Record the results in the data table. After heating, add a few drops of 6 M hydrochloric acid to the solid product to test for carbonate presence. Observe any fizzing or reaction. ####Calculations Balance chemical equations for reactions A and B: _____NaHCO3(s)→_____Na2CO3(s)+_____H2O(g)+_____CO2(g) Reaction A Reactants: Na atoms: _____ C atoms: _____ H atoms: _____ O atoms: _____ Products: Na atoms: _____ C atoms: _____ H atoms: _____ O atoms: _____ Calculate the theoretical yield of Na2CO3 if reaction A occurred, starting with the mass of NaHCO3 used. Show work below. Theoretical yield of Na2CO3: _____ Calculate the theoretical yield of Na2O if reaction A occurred, starting with the mass of NaHCO3 used. Show work below. Theoretical yield of Na2O: _____ Calculate the percent yield of Na2CO3 assuming reaction A occurred. Show work below. % _____ yield= \(\frac{\text {actual yield}}{\text {theoretical yield}}\) ×100 Percent yield of Na2CO3: _____ The world of chemical reactions is vast and varied, encompassing processes like synthesis, combustion, and decomposition. Decomposition reactions, in particular, see a substance break down into two or more distinct compounds, with sodium bicarbonate - also known as baking soda - being a prime example. When heated, baking soda (NaHCO3) can undergo thermal decomposition, leading to one of three theoretically possible outcomes: the formation of sodium hydroxide and carbon dioxide; sodium oxide, carbon dioxide, and water; or sodium carbonate, carbon dioxide, and water. In laboratory settings, the actual outcome is determined by comparing theoretical yields with experimental results, providing valuable insights into chemical processes.