Periodic table and barium chloride hydrate assignment

Procedure for Barium Chloride Hydrate (Backbench): 1) Obtain one crucible. Clean and dry if necessary. A. Record an initial mass of the crucible. 2) Set up the apparatus shown in the model attached. A. Attach an iron ring to a ring stand or to the lab metal scaffolding. B. Place a clay triangle onto the iron ring and place your crucible into the triangle. 3) Place a Bunsen burner away from apparatus and light with a striker. Adjust flame so that a blue flame is observed with a hot inner blue cone. 4) Move lit Bunsen burner into position underneath the apparatus. . Adjust flame so that the hot part of the lame heats the bottom of the crucible. 5) Heat the empty crucible (without a lid) for 5 minutes to drive away adsorbed water. A. Be careful to handle only with crucible tongs when hot! 6) Allow to cool to room temperature. 7) Record the mass of the cooled crucible. 8) Place crucible back onto the setup and reheat the crucible for 2 minutes. Allow to cool to room temperature and determine mass. B. If there has not been a significant change in mass, record the mass and continue on with the experiment. . A significant change in mass can include a mass difference of 0. 01 g. C. If here has been significant change in mass, reheat (for 2 minutes) until a constant mass is obtained. Record the constant mass. 9) Weigh out 1. 0 Goff the barium chloride hydrate on an analytical balance. A. It would be advisable to place the crucible of constant mass on the balance and tare it (set it equal to zero) and then weigh the sample into the crucible. B. Record the actual amount used. 10) Heat the crucible with the sample for 10-15 minutes. A.

Note the initial and final appearance of your crystals. 11) Allow to cool to room temperature. 12) Record the mass of the cooled crucible with the sample inside. . Subtract the mass of the empty crucible from this recorded

mass to obtain the mass of the anhydrous salt. B. Create a data table similar to the example attached. 13) Repeat the above process for a second trial using a separate quantity (between 1-2 g) to ensure results are reproducible. Clean – Up: 14) Place all anhydrous powder products in the appropriately labeled container. 5) Make sure that all gas valves are turned off Sample Data Table: a) Initial Mass of Crucible: b) Mass of Crucible After First Heating: c) Mass of Crucible After Second Heating: d) Stable Mass of Crucible:) Initial Mass of Barium Chloride Hydrate: f) Mass of Sample + Crucible After Heating: g) Mass of Barium Chloride After Heating (f – d) After Heating: (g/Mm): l) Mass of Water Lost After Heating (e – g): j) Moles of Water Lost After Heating (l/Mm): k) Experimental Mole to Mole Ratio of Abaca to H2O*: Formula for Barium Chloride Hydrate: m) True Mole to Mole Ratio of Abaca to H2O: n) True Formula for Barium Chloride Hydrate: h) Moles of Barium Chloride l) Experimental o) Experimental/Observed Percent Water in Hydrate ((l/e) x 100%): Theoretical Percent Water in Hydrate: q) Percent Error for Percent Water in Hydrate:) True/ *To determine the mole to mole ratio in whole numbers, divide the number of moles for both Abaca and H2O by the smallest number of moles from the two. Round to the nearest whole number. Lab Report: Title Page Summary a. Purpose b. Compare the experimental and true molecular formula of barium chloride hydrate. C.

Compare the experimental and true percent water in the barium chloride hydrate. Introduction a. Discuss dehydration of a compound. B. Provide the balanced equation. Results and Discussion a. Discuss your procedure with the data you collected. B. Compare the true and experimental mole to mole ratio of the hydrate. C. Discuss the experimental formula determined for

barium chloride hydrate and compare to the known formula. D. After calculation of the percent water in the barium chloride hydrate for your experiment, compare this to the true value. Discuss percent error, reasons for error, and how errors affected data/results. E. Show all calculations. F.