

Conservation of Mass (Endo/Exothermic?) Lab

Materials: Apron, goggles, calcium chloride, baking soda, film canister, phenol red, Ziplock baggie, TBB, med cup for measuring

Procedure:

1. Heading on notebook paper - lab recordings for data table, observations, & conclusion questions
2. **Put on apron and goggles!**
3. Measure out 1 Tablespoon of CaCl_2 and place in baggie
4. Measure out $\frac{1}{2}$ teaspoon baking soda and place in baggie
5. Find mass of the two together in the baggie using the TBB and record in table
6. Find mass of film canister
7. Fill canister with phenol red and record mass of just the phenol red
8. Record total mass of the reactants
9. Pour phenol red into baggie and very quickly zip up bag
10. **Record observations of reaction (paying close attention to the temperature)**
11. Measure mass of baggie with contents upon completion of reaction and record in table

Data Table on a separate paper (20 points):

Mass of CaCl_2 and Baking Soda	Mass of Phenol Red	Total Mass of Reactants	Total Mass of Products

3. Record your observations using complete sentences (20 points) :

4. Answer the following conclusion questions using complete sentences (60 pts):

1. What kind of a reaction was demonstrated by combining Calcium Chloride with Phenol Red (endo/exothermic)? Give evidence from the lab to support your answer, and explain why this kind of reaction occurs.
2. How did the **mass** of the products compare/contrast to the mass of the reactants? **Support answer with your data!**
3. If the masses of the reactants and products were not exactly the same, what do you think could account for this?
4. Is it possible to gain or lose **mass** or **energy** after a chemical reaction has occurred in a closed system? Explain your answer stating which Law(s) this supports.