

Investigating Chemical Changes in Matter

/12

Name:

Date:

Block:

Objectives:

1. To observe chemical changes in matter
2. To recognize the signs of a chemical change

Hypothesis:

If I observe _____

then a chemical change has occurred.

Safety:

- Avoid contact with chemical solutions with eyes and all body tissues
- Be sure to wear safety goggles and a lab apron at ALL times when in the lab
- Be sure to tie up long hair and roll up long sleeves
- Closed-toed shoes and long pants need to be worn during the lab
- After the lab is complete, be sure to wash hands thoroughly with soap and water

Station 1: Alka Seltzer with HCl

1. Take a half Alka Seltzer tablet and put it in a small beaker
2. Measure 10 mL of 3.0M HCl using a graduated cylinder and pipette
3. Pour the HCl into the small beaker with the Alka Seltzer tablet
4. Watch for 2 minutes and record observations in data table
5. Wash the solution down the sink and flush with plenty of water

Station 2: Magnesium with HCl

1. Using the tweezers, take a piece of magnesium and put it in a small beaker
2. Measure 10 mL of 3.0M HCl using a graduated cylinder and pipette
3. Pour the HCl into the small beaker with the magnesium strip
4. Watch for 2 minutes and record observations in data table
5. Wash the solution down the sink and flush with plenty of water

Station 3: Milk of Magnesia with Phenolphthalein

1. Using a graduated cylinder, measure 10 mL of Milk of Magnesia and pour it into a small beaker
2. Add 5 drops of phenolphthalein
3. Record observations in data table
4. Wash the solution down the sink and flush with plenty of water

Station 4: $\text{CaCl}_2 + \text{Na}_2\text{CO}_3 + \text{bromothymol blue}$

1. Using a graduated cylinder, measure 10 mL of water and pour it into a small beaker
2. Using the weigh boat and scale, scoop 0.50 g of CaCl_2 and place it into the small beaker with water. Stir the solution with a stir rod. Add 2 drops of bromothymol blue.
3. Using a graduated cylinder, measure 10 mL of water and pour it into a second small beaker
4. Using a weigh boat and scale, scoop 0.50 g of Na_2CO_3 and place it into the second small beaker with water. Stir the solution with a stir rod. Add 2 drops of bromothymol blue.
5. Pour the two solutions together
6. Record observations in data table
7. Wash the solution down the sink and flush with plenty of water

Data & Observations (4 marks):

Mixture	Qualitative Observations
Station 1: Alka Seltzer + 10mL 3.0M HCl	
Station 2: Magnesium + 10mL 3.0M HCl	
Station 3: 10mL Milk of Magnesia + 5 drops phenolphthalein	
Station 4: CaCl_2 solution + 2 drops bromothymol blue + Na_2CO_3 solution + 2 drops bromothymol blue	

Analysis/Conclusion:

1. What observations lead you to believe that a chemical reaction occurred? Be specific to each station *(4 marks)*
 - a. Station 1:
 - b. Station 2:
 - c. Station 3:
 - d. Station 4:
2. Describe **two** examples of chemical changes you experience in everyday life *(2 marks)*
3. In your own words, discuss how chemical changes are different from physical changes. Provide an example of a physical change *(2 marks)*