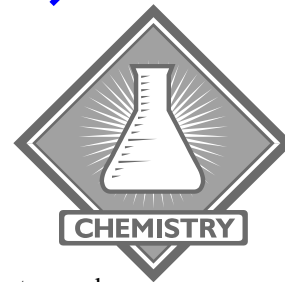


Name(s): _____

40 Pts.

Chemistry Lab: Writing Chemical Equations



I. Purpose:

To observe, predict, classify, and write balanced chemical equations that illustrate a chemical reaction.

II. Procedure:

1. At each lab bench station follow the directions to perform the experiment. You must record all observations carefully. A significant portion of the grade is based on your ability to describe a chemical reaction in words as well as symbols.
2. Complete the rest of the table for each station's experiment. Classify as double displacement, single displacement, decomposition, direct combination, or combustion. Include phase notation in your balanced chemical equation. **Clean up after each experiment.**
3. **Wear safety glasses!**

III. Analysis:

Data:

Station 1-a:	<u>Directions:</u> Place 1-2 pipets of ethyl alcohol in an evaporating dish. Cap and remove the bottle from the work area. Obtain a test tube that is dry on the outside and fill it 1/3 rd full of cold water. Strike start a lighter and bring the flame close to the alcohol. Turn off lighter as soon as the alcohol ignites. Hold a test tube above the burning alcohol. Observe the outside of the test tube. Allow all of the alcohol to burn.
Observation	
Classification	
Balanced chemical equation with phase not.	

Station 1-b:	<u>Directions:</u> Place a scoopula of sodium hydrogen carbonate in a 150-ml beaker. Add 20-ml of vinegar (dilute acetic acid). Note the temperature of the beaker. "Pour" the gas (Not the liquid!) evolved from the reaction mixture onto the evaporating dish with the burning alcohol.
Observation	
Classification	
Balanced chemical equation with phase not.	

Station 2:	Directions: Obtain a pea-sized piece of potassium metal from your teacher. Do not touch the metal! Use forceps to add the metal to a beaker of water that has 1 drop of phenolphthalein in it. Immediately cover the beaker with a wire gauze. (Phenolphthalein is not a reactant nor a product)
Observation	What is phenolphthalein? _____
Classification	
Balanced chemical equation with phase not.	

Station 3-a: (see 3-b)	Directions: Add 5-ml of hydrochloric acid solution to a test tube. Place test tube in rack. Add a small piece of zinc metal to the acid. Immediately, take a second test tube and invert it (mouth down) over the reaction test tube to collect the gas given off by the reaction. Touch the reaction test tube.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 3-b: (see 4-b)	Directions: With a match light a wooden splint. Direct the flame into the mouth of the inverted test tube.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 4	<u>Directions:</u> Cut a 6 cm piece of magnesium ribbon. Hold the end of the ribbon and place into the Bunsen burner flame. Do not stare at the bright light.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 5	Obtain a clean dry test tube and place a small amount (pea size) of ammonium carbonate into the test tube. Hold the test tube with a test tube holder over a Bunsen burner flame and heat GENTLY for 30 seconds. Remove the test tube from the flame and put a piece of moistened litmus paper in the mouth of the test tube. Waft the fumes toward your nose. Test for the formation of a gas by placing a lit wooden splint into the test tube.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 6	Start with about 1-2 pipets of clear, saturated limewater solution (saturated calcium hydroxide). Add a few drops of cobalt(II) chloride solution.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 7	<u>Directions:</u> Connect clean wires to the ends of the 9 volt battery. Use the dropper pipet to drip about 5-ml of the zinc iodide solution into a Petri dish. Place dish on a white piece of paper. Place the leads into the zinc iodide solution keeping them about 2 cm apart.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 8	The large battery jar contains water that is having an electric current passed through it. The gases evolved are captured in the test tubes.
Observation	
Classification	
Balanced chemical equation with phase notation	

Station 9	A solution of silver nitrate is in the test tube with the copper wire. The copper product is Cu^{+2}
Observation	
Classification	
Balanced chemical equation with phase notation	

- Compare the densities of carbon dioxide and hydrogen gases with air. What proof from these experiments shows the comparable densities?
- Which reactions involved a transfer of electron(s)? That is which are reduction-oxidation reactions? Circle.
Station: 1a 1b 2 3a 3b 4 5 6 7 8 9