

Evidence and Classification of Chemical Reactions

Name(s): _____, _____ Date: _____ Period: _____

Purpose: In this activity you will be exploring and identifying various types of chemical reactions by making observations while the reaction takes place and then matching the likely reaction to the chemical equation. You will also be balancing the equations. Because some of these reactions are potentially dangerous it is extremely important that you **WEAR LAB APRONS AND GOGGLES AT ALL TIMES**. Be sure to ask your instructor first if you are unsure about any portion of the laboratory procedures. The reaction equations contained in this lab can be found at the end.

Reaction 1: See your instructor to receive a small piece of calcium metal (<.100g). **Never touch the metal with your bare hands. Calcium is extremely moisture reactive.** Use tweezers to place the sample in a **dry** evaporating dish. Using a 100 mL beaker, fill the beaker to the 50 mL mark with deionized water. Place the beaker inside the fume hood. Making sure you have your safety gear on, pick up the calcium with your dry tweezers and place it in the water. Lower the fume hood screen as the reaction gives off a *potentially* combustible product. After the reaction has gone to completion remove it from the fume hood and **take it back to your lab station for further reactions.**

Describe the reaction and cite any evidence (heat, light, change of color, smoke/steam, bubbles (fizzing), odor, etc.) of a reaction taking place.

Identify the proper chemical reaction and write the balanced equation in the space below.

Identification of Reaction Type: _____

Reaction 2: Take a clean 10mL graduated cylinder to your instructor to receive a 5.0 mL sample of hydrochloric acid. **Be extremely careful you don't get this acid on yourself, it is very corrosive.** Slowly pour the acid into the mixture leftover from the previous reaction while gently stirring with a glass stirring rod. Stir until you see a change take place.

Describe the reaction and cite any evidence (heat, light, change of color, smoke/steam, bubbles (fizzing), odor, etc.) of a reaction taking place.

Identify the proper chemical reaction and write the balanced equation in the space below.

Identification of Reaction Type: _____

Thoroughly rinse your 10 mL graduated cylinder (without getting acid on yourself) and return it to your lab bin. Save the remains of the reaction in the 100 mL beaker for the next reaction.

Reaction 3: Retrieve a dropper bottle of silver nitrate solution from the chemical supply area (**Caution: Don't get this solution on your hands or clothes, it will stain them brown and it will not wash out!**) Slowly place about 5 drops of the silver nitrate solution into the 100 mL beaker mixture you saved from the last reaction.

Describe the reaction and cite any evidence (heat, light, change of color, smoke/steam, bubbles (fizzing), odor, etc.) of a reaction taking place.

Identify the proper chemical reaction and write the balanced equation in the space below.

Identification of Reaction Type: _____

When you are finished, pour the contents of your beaker into the waste container provided by your instructor. Clean out your 100 mL beaker and return it to your lab bin.

Reaction 4: Measure 10.0mL of silver nitrate solution into a clean, dry 50.0mL beaker. Retrieve a small sample of copper and place it into the solution. Allow the reaction several minutes to take place (you can stir gently with a glass stirring rod if desired).

Describe the reaction and cite any evidence (heat, light, change of color, smoke/steam, bubbles (fizzing), odor, etc.) of a reaction taking place.

Identify the proper chemical reaction and write the balanced equation in the space below.

Identification of Reaction Type: _____

Dispose of the product as instructed and then you may rinse out your 50mL beaker and return it to your lab bin.

Reaction 5: Retrieve a dropper bottle of ethanol (C_2H_5OH ; labeled as EtOH) and place about 20 drops of the ethanol into a clean, dry watch glass. Ignite the ethanol with a lighter and observe the progress of the reaction. (**Use caution, the flame can be hard to see!**)

Describe the reaction and cite any evidence (heat, light, change of color, smoke/steam, bubbles (fizzing), odor, etc.) of a reaction taking place.

Identify the proper chemical reaction and write the balanced equation in the space below.

Identification of Reaction Type: _____

Once the watch glass has cooled you may rinse the watch glass and return it to its proper place.

MAKE SURE ALL CHEMICALS AND MATERIALS HAVE BEEN RETURNED TO THEIR PROPER PLACE AND CLEANED IF APPLICABLE.

Reactions (unbalanced):

