

Chemical Reactions & Equations Lab Activity

Name: _____

System 1 (DEMO): Reaction of Sodium Metal with Water

Observations:	
Reaction Type:	
Balanced Equation: (Na with H ₂ O)	
Reaction in words:	

The hydrogen gas produced in the reaction can ignite in the presence of oxygen gas in the air. If you observed flames above, it was likely due to this reaction

Reaction Type:	
Balanced Equation: (hydrogen gas with oxygen gas):	

System 2: Combustion Reactions of Methane (CH₄) and Cellulose (empirical formula=C₆H₁₀O₅)

Procedure: Light a Bunsen burner flame. Observe. Light a wood splint (primarily cellulose fibers). Observe. Extinguish the flames. Complete the table below.

Observations:	
Balanced Equation: (combustion of methane)	
Balanced Equation: (combustion of cellulose)	
Reaction in words: (combustion of cellulose)	

System 3: Magnesium in Hydrochloric Acid

Procedure: Place ~ 3 mL of 1 M HCl solution in a test tube. Drop a small strip of magnesium metal (1-2 cm) into the tube. Observe. Complete the table below.

Observations:	
Reaction Type:	
Balanced Equation:	
Reaction in words:	

System 4: Mixing aqueous solutions

Procedure: Put 1-2 mL of 0.1 M potassium iodide solution into each of two test tubes. Add 1-2 mL of lead (II) nitrate to one. Add 1-2 mL of zinc nitrate to the other. Observe. Complete the table below. *Note that only one test tube is likely to have a reaction. After the observations are made, fill out the rest of the table for the reaction that takes place.*

Observations: (for both test tubes):		
Reaction Type:		
Balanced Equation:		
Reaction in words:		
Net Ionic Equation:		

How might you have predicted which would have resulted in a chemical reaction?

Are your observations consistent with that prediction?

System 5: Solutions and Metals

Procedure: Put 2-3 mL of 0.1 M copper (II) sulfate solution in a test tube. Drop a small strip of magnesium metal (1-2 cm) into the tube. Put 2-3 mL of 0.1 M magnesium nitrate solution in a test tube. Add a small piece of copper metal. Observe both test tubes at 5 minutes and again at 10 minutes. Complete the table below. *Note that only one test tube is likely to have a reaction. After the observations are made, fill out the rest of the table for the reaction that takes place.*

Observations: (for both test tubes):		
Reaction Type:		
Balanced Equation:		
Reaction in words:		
Net ionic equation:		

How might you have predicted which would have resulted in a chemical reaction?

Are your observations consistent with that prediction?

System 6 (DEMO): Sodium Bicarbonate (Baking Soda) and Acetic Acid (Vinegar)

Please record observations and write out reactions on the back of the page.

Post-Lab Questions:

As assigned by your instructor.