

Reactions Lab

Name: _____

In this lab you will be investigating types of chemical reactions.

Procedure:

1. You will be assigned to a workstation to begin the lab
2. Follow the instructions at the lab station. You will have approximately 6 minutes at each station so work safely, but work efficiently as a group.
3. When finished, follow the directions at each station for clean up.
4. Remain at the station until you are directed to move on.
5. At Ms. Neiman's direction, move to the next lab station (you will have approximately 6 minutes at each lab).
6. Repeat steps 2-5 until all labs have been completed.

Questions:

- 1-8. Write a balanced molecular equation for all 8 reactions and identify the type of reaction represented by each.
- 9-10. Write a balanced net ionic equation for the reaction in workstation 4 and 6 A.

For each of the following situations, use the information to write a balanced equation, and identify the type of reaction.

11. When potassium bromate (KBrO_3) is heated, it decomposes into potassium bromide and a gas that supports the combustion of a glowing splint.
12. Sodium metal reacts violently with water to produce sodium hydroxide (NaOH) and a gas that pops in the presence of a burning splint.

Reactions Lab

Name: _____

Data :

Workstation 1

Chemicals used	
Observations	
Type of reaction	
Equation	

Workstation 2

Chemicals used	
Observations	
Type of reaction	
Equation	
Chemicals used	
Observations	
Type of reaction	
Equation	

Workstation 3

Chemicals used	
Observations	
Type of reaction	
Equation	

Workstation 4

Chemicals used	
Observations	
Type of reaction	
Equation	

Workstation 5

Chemicals used	
Observations	
Type of reaction	
Equation	

Workstation 6

Chemicals used	
Observations	
Type of reaction	
Equation	
Chemicals used	
Observations	
Type of reaction	
Equation	

Workstation 1

1. Add 2 ml (20 drops) of **Hydrochloric Acid** to a test tube in a test tube rack.
2. Drop 5 small pieces of **Magnesium** into the test tube.
3. Place your thumb over the mouth of the test tube trapping the gas produced.
4. When the reaction appears to have ended, light a wood splint and quickly test the collected gas for flammability by holding the burning splint just inside the mouth of the test tube when you remove your thumb. Do not lower the burning splint low enough to contact the liquid in the test tube.
5. Record your observations.
6. Clean your workstation. Leave it as you found it.
 - Extinguish the burning splint in the beaker full of water
 - Rinse the test tube into the waste beaker and invert on the peg of the test tube holder to dry

Workstation 2

Part A

Copper and O₂

1. Light the Bunsen burner.
2. Hold a piece of copper (2 cm) with a pair of tongs.
3. Place the copper in the flame.
4. Record your observations.
5. Clean your workstation. Leave it as you found it.
 - Burnt metals go into water beaker

Part B.

Mg and O₂

1. Light the Bunsen burner.
2. Hold a piece of magnesium (2 cm) with a pair of tongs.
CAUTION: DO NOT LOOK AT THE BURNING RIBBON. THE BRIGHT LIGHT IS CAPABLE OF HURTING YOUR EYES
3. Place the magnesium in the flame.
4. Record your observations.
5. Clean your workstation. Leave it as you found it.
 - Burnt metals go into water beaker

Workstation 3

1. Add 10 ml hydrogen peroxide to a test tube.
2. Add a drop of potassium permanganate to the test tube.
3. Place your thumb over the mouth of the test tube trapping the gas produced.
4. As the reaction occurs, light a wood splint and allow it to burn freely for 5 seconds.
5. Blow out the flame and place the glowing splint just inside the mouth of the test tube when you remove your thumb. Do not lower the burning splint low enough to contact the liquid in the test tube.
6. Record your observations.
7. Note: The potassium permanganate does not participate in the reaction, it just makes it happen- it is NOT in the equation.
8. Clean your workstation. Leave it as you found it.
 - Extinguish the burning splint in the beaker full of water
 - Rinse the test tube into the waste beaker and invert on the peg of the test tube holder to dry

Workstation 4

1. Place a small scoop of sodium bicarbonate in a test tube.
2. Add 5 ml of acetic acid to the test tube.
3. Place your thumb over the mouth of the test tube trapping the gas produced.
4. When the reaction appears to have ended, light a wood splint and quickly test the collected gas for flammability by holding the burning splint just inside the mouth of the test tube when you remove your thumb. Do not lower the burning splint low enough to contact the liquid in the test tube.
5. Record your observations.
9. Clean your workstation. Leave it as you found it.
 - Extinguish the burning splint in the beaker full of water
 - Rinse the test tube into the waste beaker and invert on the peg of the test tube holder to dry

Workstation 5

1. Add small piece of zinc to a test tube.
2. Add approximately 5ml of copper (II) sulfate to the test tube.
3. Observe the reaction for 3-4 minutes.
4. Record your observations.
5. Dump test tube into the filter paper lined funnel, look at the solid you collected.
6. Record your observations.
7. Clean your workstation. Leave it as you found it.
 - Dump beaker under funnel into waste beaker
 - Rinse the test tube into the waste beaker and invert on the peg of the test tube holder to dry

Workstation 6

Part A.

1. Combine 2 drops of each reactant (iron (III) nitrate and sodium carbonate) on the reaction paper (paper in plastic sheet cover)
2. Observe the reaction for 3 minutes, you may want to wiggle the sheet on the table.
3. Record your observations.
4. Clean your workstation. Leave it as you found it.
 - Wipe off the reaction paper with a paper towel and dispose of towel in trashcan.

Part B.

1. There is silver nitrate solution in the test tube.
2. Lower the length of copper into the tube.
3. Observe every minute for at least 3-4 minutes.
4. Record your observations.
5. Clean your workstation. Leave it as you found it.
 - Remove copper from the test tube
 - Wipe off copper with a paper towel
 - Do nothing to the silver nitrate solution in the test tube