PUTTING IT TOGETHER: Classifying Chemical Reactions

**PURPOSE:**

**MATERIALS AND METHOD:**

# Reaction A: Magnesium Burning in Oxygen

1. Examine the magnesium carefully and record your observations.
2. One end of the strip will be held with tongs, and placed in the hottest part of the Bunsen burner flame.
3. The strip will be removed from the flame as soon as the reaction starts. **CAUTION: DO NOT LOOK DIRECTLY AT THE FLAME.**
4. Record your observations.

# Reaction B: Sodium Chloride and Silver Nitrate

1. Place approximately 1 mL of sodium chloride solution in a test tube. In a second test tube, pour approximately 1 mL of silver nitrate solution. Record initial observations of the reactants. **SILVER NITRATE IS TOXIC AND WILL STAIN SKIN AND CLOTHES.**
2. Pour the sodium chloride into the test tube containing the silver nitrate solution. Let stand for a few minutes.
3. Record your final observations

**Reaction C:** **Silver Nitrate and Copper**

1. Place about 2 mL of silver nitrate solution in the test tube.

1. Obtain a small (1 cm) strip of copper and record your initial observations.
2. Add the copper to the solution.
3. After a few minutes, record any changes you observe.

# Reaction D: Copper (II) Sulphate Pentahydrate

Part 1:

1. Using a scoopula, add one scoop of copper(II) sulfate pentahydrate to an evaporating dish. Record your observations.
2. Support the evaporating dish with a ring clamp and retort stand.
3. Gently heat the evaporating dish by placing the dish 10 cm above the bunsen burner flame.
4. Continue heating for several minutes.
5. Record your observations.

Part 2:

1. When the solid is cooled, place a couple of drops of water on the powder. Record your observations.

# OBSERVATIONS:

|  |  |  |  |
| --- | --- | --- | --- |
| **Reaction** | **Reactants** | **During** | **Products** |
| **A** |  |  |  |
| **B** |  |  |  |
| **C** |  |  |  |
| **D** |  |  |  |

# QUESTIONS:

1. For each of the four reactions, what evidence is there that a chemical change occurred?

|  |  |
| --- | --- |
| Reaction | Evidence of Chemical Change |
| A |  |
| B |  |
| C |  |
| D |  |

1. Complete the following chart for each reaction:

|  |  |  |
| --- | --- | --- |
| Reaction | **Reactants** | **Products** |
| **A** | 1. | 1. |
| 2. |
| **B** | 1. | 1. |
| 2. | 2. |
| **C** | 1. | 1. |
| 2. | 2. |
| D | 1. | 1. |
| 2. |

1. For each of the four reactions, write the word equation.

1.

2.

3.

4.

1. For each of the four reactions, balance the chemical equation.
   1. Mg + O2 → ­MgO
   2. AgNO3 + NaCl → AgCl + NaNO3
   3. AgNO3 + Cu → Cu(NO3)2 + Ag
   4. CuSO­4•5H2O → CuSO4 + H2O
2. For each reaction, identify the type of reaction:

|  |  |
| --- | --- |
| Reaction | Type of Reaction |
| A |  |
| B |  |
| C |  |
| D |  |

# CONCLUSION: What are the four different types of reactions?