

Topic: Lab # 20 - Types of Chemical Reactions

Name _____

Date of Performance _____

Partner/s' name/s _____

Period _____

Lab # - Types of Chemical Reactions

Purpose: To differentiate among the four general types of chemical reactions.

Abstract: *To identify redox reactions, oxidizing agents and reducing agents. To identify the substance oxidized or reduced and write oxidation and reduction reaction*

Paragraph 1: Discuss each of the four general types of chemical reactions.

How would you distinguish one type of reaction from the others? Give an example of each type.

Paragraph 2: Summarize the procedure in 2-3 sentences.

Apparatus: crucible tong, Bunsen burner, match, 250-ml beaker, 1 small test tube, spatula, stopper, 1 large test tube, test tube clamp, iron stand

Materials: Mg ribbon, Mg granules, copper (II) nitrate solution, iron filings, cupric sulfate pentahydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$), 3M hydrochloric acid, lead (I) nitrate solution, potassium iodide solution

Lab Safety: Wear goggles and apron. Observe extra care in handling corrosive liquids and working with open flame.

Procedure: STEP 1 *Demonstration by teacher.*

1. Obtain a piece of Mg ribbon. Use crucible tong to hold the sample in the Bunsen flame until it ignites. Hold the burning Mg over a clean, dry 250-mL beaker,

allowing the product to drop into the beaker. Examine the product carefully before discarding into the wastebasket. Record your observations.

2. Half fill a small test tube with Cu(II) sulfate solution. Add a pinch of iron (Fe) filings. Cork and shake the mixture, then uncork. Observe the result and record your observations. Discard solid waste into the wastebasket.
3. Fill the bottom of a large test tube with $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$. Fasten the test tube using a test tube clamp to an iron stand. Tilt the test tube at 45° pointing away from anybody. Heat the bottom of the test tube where the crystals are located until a change in color is observed. Record your observations.
4. Half fill a small test tube with 6M hydrochloric acid. Add a piece of Mg granule. Observe a gas forming. Invert a bigger test tube on top of the small test tube for about 30 seconds, then immediately hold a burning splinter on the mouth of the big test tube. Observe what happens. (Do not drop the splinter into the test tube.) Discard solid waste into the wastebasket. Record your observations.
5. Place about 5 drops of Pb(II) nitrate solution in a small test tube. Add the same number of drops of potassium iodide solution. Observe what happens. Record your observations.

Data and Results:

Reagents used	Observations	Type of Reaction
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1.

2.

3.

4.

5.