**Types of chemical reactions**

**Introduction**

During this lab you will complete five experiments in order to observe and differentiate between the various types of reactions discussed in class.

**Procedure**

**Single Replacement**

1. Fill a test tube half full of copper (II) Sulfate solution. Add 2 grams of Fe Filings. Record your observations on your reaction data table.

**Double Replacement**

2. Fill a test tube half full of lead (II) Nitrate solution. Add 6 drops of Potassium iodine solution. Record your observations on your reaction data table.

**Double Replacement**

3. Pour the potassium nitrate solution (clear liquid) from the 2nd experiment into a clean test tube (Decant). Add an equal amount of 6 M HCl. Record your observations on your reaction data table.

**Single Replacement**

4. Fill a test tube half full of 6M HCl. Put 2 pieces of magnesium ribbon in the solution. Test the identity of the gas produced with a burning wood splint. (Point the test tube away from all people. Hold a burning wood splint over the top) Record your observations on your reaction data table.

**Decomposition**

5. Fill a 125 ml erlenmeyer flask about 1/3 full of fresh 3% hydrogen peroxide. Add a small amount of yeast (catalyst) shake briefly and wait one minute. Test the identity of the gas produced with a burning wood splint. (do not drop the splint in – the liquid will put it out) Record your observations on your reaction data table.

Reaction data table

|  |  |
| --- | --- |
| **Reaction** | **Observations** |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |

**Analysis questions**

1. What happens to the burning wood splint when hydrogen is present? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. What happens to the burning wood splint when oxygen is present? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3. Write the balanced equation for each reaction, with state symbols for each reaction.

Reaction 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reaction 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reaction 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reaction 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reaction 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_