

## Lab Handout

### Experiment 6D: Investigating which Reactant is in Excess

This procedure is an alternate method to the procedure found in the Heath Chemistry Laboratory textbook. **Please follow these procedures instead of the textbook.**

#### Part I: Reaction of Zn and HCl (Day 1)

1. Put on your lab coat and listen to and follow instructions **carefully**.
2. Find and record the mass of a clean test tube. Label the test tube with **your initials, your partner's initials, and Exp. 6D**. Add **less than 1.00g** of Zn into the test and find the mass of the test tube and Zn.
3. Add **10.0 mL of 3M HCl** into a 25 mL graduated cylinder. Go to your lab bench and add the 10.0 mL of 3M HCl into the test tube. Make observations of the reaction including a sketch of the test tube and contents. Label all substances present in the test tube.
4. Store the test tube on the test tube racks at the back of the room on the side bench. **Move on to Experiment 6E.**

#### Part II: Determining the Excess Reactant (Day 2)

1. Observe the contents of your test tube and determine which reactant is in excess.

### Experiment 6E: Predicting and Measuring the Mass of a Reactant in Excess

This procedure is an alternate method to the procedure found in the Heath Chemistry Laboratory textbook. **Please follow these procedures instead of the textbook.**

#### Part I: Reaction of Zn and HCl (Day 1)

1. Keep your lab coat on.
2. Find and record the mass of a clean test tube. Label the test tube with **your initials, your partner's initials, and Exp. 6E**. Add **more than 1.50g** of Zn into the test tube and find the mass of the test tube and Zn.
3. Add **10.0 mL of 3M HCl** into a 25 mL graduated cylinder. Go to your lab bench and add the 10.0 mL of 3M HCl into the test tube. Make observations of the reaction.
4. Store the test tube on the test tube racks at the back of the room on the side bench. Clean up your lab area and begin your calculations for both Experiment 6D and 6E (**don't forget sig figs! =)**)

**Part II: Determining the Mass of Excess Zn (Day 2)**

1. Examine your test tube and make observations.
2. Decant the liquid into a clean, dry beaker. Rinse the contents of the test tube with 10 ml of water (do this three times). Decant the water into the **same beaker you had used originally**.
3. **Take out your goggles**. Using your burner, heat the test tube gently until all the water is evaporated. Allow your test tube to cool.
4. **Measure the mass of your test tube and its contents** and record this data. Clean up you lab area and finish your calculations.