

Name: _____ Date: _____ Block: _____

Limiting Reactant Lab

Pre-lab:

In this lab, two aqueous solutions will be prepared: lead (II) nitrate and potassium iodide. The two aqueous solutions will be mixed together and a precipitate will be made through a double replacement reaction.

Below is the balanced equation that represents the reaction. Of the two products, which is the precipitate? Identify each product as solid, liquid, gas, or aqueous by placing the correct symbol in parentheses after each formula.



Purpose:

To produce a precipitate and separate the precipitate from the aqueous solution using filtration. To calculate the experimental yield of precipitate, theoretical yield and percent yield.

Safety:

Goggles must be worn at all times. Report spills and/or accidents immediately.

Procedure:

1. Measure about 1 gram of $\text{Pb}(\text{NO}_3)_2(\text{s})$ into a 100 mL beaker. Record the exact mass.
2. Measure about 1.5 grams of $\text{KI}(\text{s})$ into a 250 mL beaker. Record the exact mass.
3. Add enough distilled water to each beaker to completely dissolve the solid.
4. Stir each solution.
5. Pour contents of small beaker into the large beaker.
6. Stir the contents of the beaker.
7. Write names in pencil on the bottom of the filter paper.
8. Measure and record mass of the filter paper.
9. Fold the filter paper in half twice. Place the tip of the folded filter paper into a funnel. Once in the funnel, unfold the filter paper.
10. Place the funnel on top of an Erlenmeyer flask.
11. Pour precipitate and aqueous solution mixture on top of the filter paper.
12. Use a wash bottle of distilled water to get as much of the precipitate out of the beaker and onto the filter paper.
13. Once all the water has traveled past the filter paper, place the filter paper containing the precipitate on the blue tray. The precipitate will dry overnight.
14. Clean all glassware with tap water and return them to your station.
15. Wipe your lab bench with sponge and water.
16. Call Ms. Wong for final lab bench inspection.
17. Wash your hands with soap and water.

Data: Organize all measurements into a data table. Be sure to include units.

$\text{Pb}(\text{NO}_3)_2$	1.03 g
KI	1.49 g
Filter paper	0.88 g
Filter paper with PbI_2	2.15 g

