

Name: _____

Date: _____

Stoichiometry of a Double Displacement Reaction – Alkali Metal Iodide and Lead (II) Nitrate

Materials:

lead (II) nitrate an alkali metal iodide: _____

Equipment:

two beakers	magnetic stir bar	hot plate/stir plate
filter paper	funnel	125 mL Erlenmeyer flask
spatula	balance	tongs
dropper pipet		

Procedure:

1. Determine the products of the reaction. Determine which product is the precipitate. Determine the mass of each reactant needed. Recall that you need to produce _____ grams of the precipitate. Have this step checked off before proceeding any further. You will receive a grade separate from the rest of the lab.
2. Obtain the mass of each reactant that you just calculated and add each to a separate beaker. Add 25 mL of distilled water to one of the beakers and add a magnetic stir bar.
3. Place the beaker on the stir plate and stir at a moderate speed until all the solid has disappeared. If necessary, add more distilled water. Try to avoid doing so as this will require more filtering time later.
4. Retrieve the magnet from the beaker. Wash it thoroughly and add it to the second beaker.
5. Repeat steps two and three. When thoroughly dissolved, pour the contents of this beaker into the contents of the first beaker. This includes the magnetic stir bar.
6. Place the beaker on the stir plate and stir at a moderate speed for two minutes.
7. Obtain a 125 mL Erlenmeyer flask, funnel, and filter paper. Write the group's names and block number on the filter paper. Record the mass of the dry filter paper. Assemble a gravity filtration setup as demonstrated earlier.
8. Wet the filter with distilled water so it remains in the funnel. Begin to filter the precipitate from the beaker. Ensure that the solution does not rise above the level of the filter paper.
9. Use tongs or another magnet to remove the magnet from the beaker containing the precipitate. Use a dropper pipet to wash it off with distilled water, ensuring that the precipitate falls into the filter paper.
10. Use the dopper pipet to rinse the inside of the beaker with distilled water. Filter this solution until the maximum amount of solid has been washed from the beaker.
11. When all of the precipitate has been filtered, carefully remove the filter paper from the funnel. Place it in a secure area and allow it to dry.
12. Clean up all of the other equipment and rinse them appropriately with water.
13. When the filter paper has fully dried, record its mass. Discard the filter paper.

Calculations:

1. Determine the actual yield of the precipitate.
2. Calculate the percent yield of the precipitate.

Conclusion:

Provide reasons for why your actual yield and theoretical yield differ.