

Student Name: _____ Lab Partner(s) _____

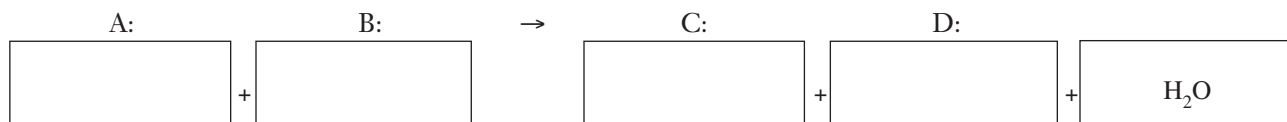
Stoichiometry . . . Can You Make 2.00 Grams of a Compound?

Pre-Lab Calculations

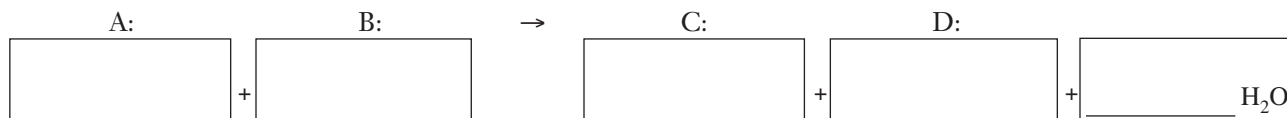
Sample Problem: *How would you prepare 2.00 grams of precipitate by reacting barium chloride dihydrate with silver nitrate?*

Directions: Complete the following equations/problems showing ALL WORK, including the necessary units and labels.

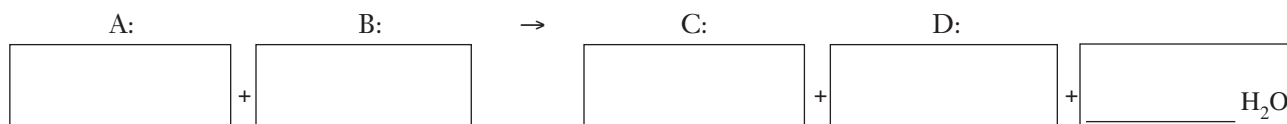
1. Write a complete word equation listing the names of the reactants and the predicted products.



2. Write a balanced formula equation for your double displacement reaction. Predict which compound will form a precipitate and indicate this in the equation using the symbol, (s), following the chemical formula.



3. Calculate the molar mass of each reactant and product and put the answers in the blank spaces below.



Work Space

Molar Mass reactant A:

Molar Mass reactant B:

Molar Mass product C:

Molar Mass product D:

Molar Mass H₂O:

4. Calculate the number of moles in 2.00 g of the precipitated product.

Molar Mass of precipitate: _____

Number of moles of precipitate: _____

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Pre-Lab Calculations, continued

5. Use dimensional analysis to determine the mass of each reactant required to make 2.00 grams of your precipitate. First, determine the number of moles of each reactant and product and then calculate the mass of all reactants and product(s). Put the answers in the blank spaces below. Does the total mass of all reactants equal the total mass of all products? If not, check your work.

Moles: A: B: → C: D: H₂O

Grams: A: B: → C: D: H₂O

Work Space

Mass of reactant A needed:

Mass of reactant B needed:

Mass of product C that should form:

Mass of product D that should form:

Mass of H₂O that should form:

6. Complete the data chart below to determine the mass of precipitate formed in the sample experiment:

Mass of dry filter paper + precipitate	2.97 g
– Mass of dry filter paper	– 1.02 g
= Mass of precipitate	<u> g</u>

7. Calculate your percent error based on the relationship below:

$$\% \text{ error} = \frac{\text{experimental mass of precipitate} - 2.00 \text{ g predicted mass}}{2.00 \text{ g predicted mass}} \times 100 = \boxed{}$$

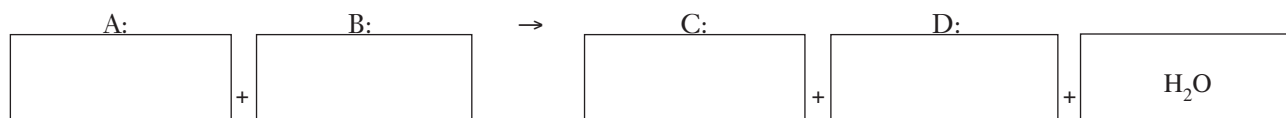
Stoichiometry . . . Can You Make 2.00 Grams of a Compound?

Student Laboratory Worksheet

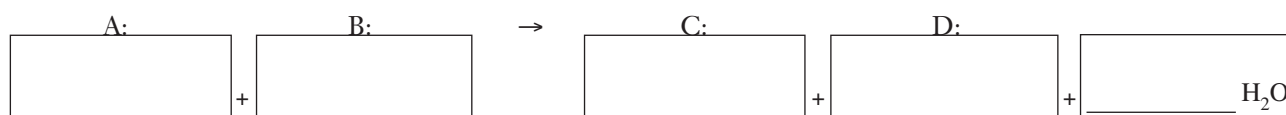
Directions: Complete the following equations/problems showing ALL WORK, including the necessary units and labels.

Assigned Reactants # _____

1. Write a complete word equation listing the names of the assigned reactants and the predicted products.



2. Write a balanced formula equation for your double displacement reaction. Predict which compound will form a precipitate and indicate this in the equation using the symbol, (s), following the chemical formula.



3. Calculate the molar mass of each reactant and product and put the answers in the blank spaces below.



Work Space

Molar Mass reactant A:

Molar Mass reactant B:

Molar Mass product C:

Molar Mass product D:

Molar Mass H₂O:

4. Calculate the number of moles in 2.00 g of the precipitated product.

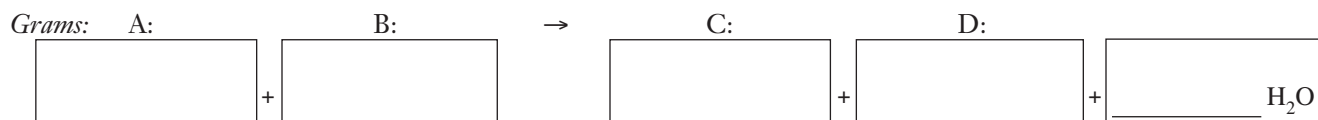
Molar mass of precipitate: _____

Number of moles of precipitate: _____

Stoichiometry . . . Can You Make 2.00 Grams of a Compound?

Student Laboratory Worksheet, continued

5. Use dimensional analysis to determine the mass of each reactant required to make 2.00 grams of your precipitate. Calculate the mass of the other product(s) that will form. Put the answers in the blank spaces below. Does the total mass of all reactants equal the total mass of all products? If not, check your work.



Work Space

mass of reactant A needed:

mass of reactant B needed:

mass of product C that should form:

mass of product D that should form:

mass of H₂O that should form:

6. Complete the data chart below to determine the mass of precipitate actually formed in the experiment:

Mass of dry filter paper + precipitate	_____ g
– Mass of dry filter paper	– _____ g
= Mass of precipitate	_____ g

7. Calculate your percent error based on the relationship below:

$$\% \text{ error} = \frac{\text{experimental mass of precipitate} - 2.00 \text{ g predicted mass}}{2.00 \text{ g predicted mass}} \times 100 = \boxed{}$$

8. Describe some of the possible causes for your experimental error.