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**Bellwork:**

In a combustion experiment, a student makes 4.7 L of H2O (g) when burning 3.6 L ethane gas, C2H4 (g), in the presence of oxygen. What is the percent yield of this reaction? What is the percent error?

a. Calculate theoretical yield of H2O

b. Determine percent yield of reaction

c. Determine percent error of reaction

***Save the World* data analysis:**

 Fill in the table below with the results your group obtained from lab. We will calculate the percent yield and percent error for Groups A and B as a class.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Group | Given reactant | Theoretical yield of antidote (g) | Actual yield (g) | Percent Yield | Percent Error |
| A | LiHCO3 | 2.00 g LiCl | 1.68 g LiCl |  |  |
| B | LiHCO3 | 2.00 g LiCl  | 2.14 g LiCl |  |  |
| Yours! |  |  |  |  |  |

***Save the World* error analysis:**

Look back over the data in the table above. Are the sources of error the same for Groups A and B? What would lead to having too much or too little of the expected product?

Draw arrows in front of the reactants and products to show sources of error:

Group A: LiHCO3  + HCl $\rightarrow $ LiCl + H2O + CO2

Group B: LiHCO3  + HCl $\rightarrow $ LiCl + H2O + CO2

**Construct a Claim-Evidence-Reasoning argument to show that you recognize the source of error and can modify your experimental procedure in the future to obtain better results:**

Your group’s reaction:

**Claim:** Our group’s experiment produced too \_\_\_\_\_\_\_\_ of the antidote in comparison with what was expected. This led to a percent error of \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Evidence:** During our lab, the reaction didn’t go as planned when...

**Reasoning:** This error caused our actual yield to be too \_\_\_\_\_\_\_\_, because….

Analyze and evaluate an error analysis for the Empirical Formula Lab:

*(1) Read through the following error analysis section from this student’s Empirical Formula lab.*

*(2) Identify their claim, their use of evidence and their lines of reasoning by underlining or highlighting these elements.*

*(3) Write 2-3 sentences about how effective you feel that they analyzed their lab process and suggestions for improvement.*

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