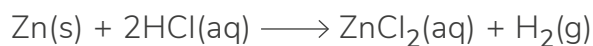


Percentage Yield

Use a calculator and a periodic table to answer the following questions.

1. 19.62 g of zinc reacted with an excess of hydrochloric acid to produce a solution of zinc chloride.



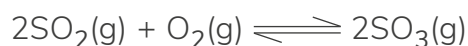
Crystallisation of the solution yielded 35.46 g of zinc chloride.

Calculate the percentage yield.

Give your answer to an appropriate number of significant figures.

percentage yield = _____

2. At room temperature and pressure, 120 cm^3 of sulfur dioxide reacts with 100 cm^3 of oxygen to produce 109 cm^3 of sulfur trioxide.



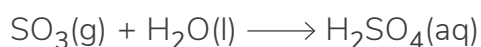
- a. Calculate the percentage yield of this reaction.

Give your answer to an appropriate number of significant figures.

percentage yield = _____

- b. Explain why the percentage yield of this reaction is not 100%.

- c. The above reaction occurs during one of the steps in the Contact process. In the next step of the Contact process, sulfur trioxide reacts with water to make sulfuric acid.



The percentage yield of this step is 93.3%.

Calculate the overall percentage yield of the steps shown above.

overall percentage yield = _____

3. On heating, 62.1 g of calcium carbonate produced 16.5 g of carbon dioxide.



Calculate the percentage of the calcium carbonate that decomposed.

Give your answer to an appropriate number of significant figures.

percentage decomposition = _____

4. 4.745 g of bromomethane (CH_3Br) reacted with an excess of sodium hydroxide. The percentage yield of the reaction is 93.1%.



What is the mass of methanol (CH_3OH) produced?

- A. 1.09 g ☐
- B. 1.49 g ☐
- C. 1.93 g ☐
- D. 2.04 g ☐