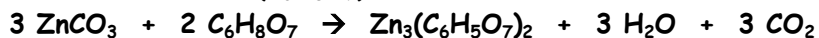


AP STOICHIOMETRY Examples

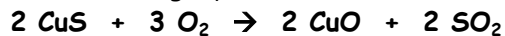
1. The following balanced reaction shows the synthesis of zinc citrate, an ingredient in toothpaste, from zinc carbonate and citric acid ($C_6H_8O_7$).



- a. What mass of CO_2 is produced by the reaction of 3.48 grams of citric acid if the percent yield is 78.5 %? What is the percent error?
- b. What is the percent yield of the reaction if 12.5 grams of citric acid produces 4.75 grams of zinc citrate? What is the percent error?
- c. Discuss the significance of your values calculated in part (b) above.
2. a. What is the percent yield of tungsten if 56.9 grams of WO_3 reacts with excess hydrogen gas to produces 41.4 grams of tungsten? Water is also a product of this reaction.
- b. What is your percent error for this reaction?
- c. If the percent yield for water is 85.3%, how much water would be produced?

AP STOICHIOMETRY Examples

3. In the production of copper from an ore containing copper (II) sulfide, the ore is first roasted to change it to the oxide according to the following equation:



If 187 g of copper (II) sulfide is available to react with 5.06 g of oxygen,

- a. What is the limiting reactant?
 - b. What mass of copper (II) oxide can be produced?
 - c. Determine the mass of excess reactant remaining.
4. You have 45.7 grams of ethane (C_2H_6) and 34.2 grams of oxygen available for a combustion reaction.
- a. What mass of excess reactant is left? (4 points)
 - b. What mass of carbon dioxide is formed? (6 points)