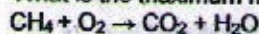
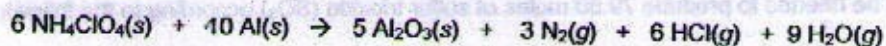


LIMITING REAGENTS and YIELD

1. What is the maximum mass of methane (CH_4) that can be burned if only 1.0 g of oxygen is available?



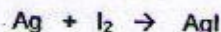
2. The solid fuel in the booster stage of the space shuttle is a mixture of ammonium perchlorate and aluminum powder, which react as follows:



What mass of aluminum should be mixed with 5.0×10^3 kg of ammonium perchlorate, if the reaction proceeds as stated?

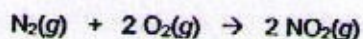
3. A solution containing 5.0 g of silver nitrate was mixed with another containing 5.0 g of potassium chloride. Which was the limiting reagent for the precipitation of silver chloride?

4. How many grams of silver metal (Ag) are required to react completely with 531.8 g of iodine (I_2) to produce silver iodide (AgI)?



5. The theoretical yield of ammonia in an industrial synthesis was 550 tons, but only 480 tons was obtained. What was the percentage yield of the reaction?

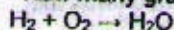
6. Assuming that the gases are all at STP, find the volume of nitrogen dioxide gas (NO_2) that could be produced from 71.11 dm^3 of nitrogen gas (N_2) according to this balanced chemical equation.



7. How many moles of oxygen (O_2) would be needed to produce 79.60 moles of sulfur trioxide (SO_3) according to the following balanced chemical equation?



8. How many grams of water will be produced from 50 g hydrogen reacting with 50 g oxygen?



9. According to the balanced chemical equation, how many grams of silver will be produced from combining 100 g of copper with 200 g of silver nitrate?



10. At 75% yield how much carbon dioxide is produced when carbon and oxygen react?

