

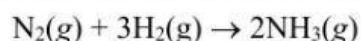
CHAPTER 9 REVIEW

Stoichiometry

SECTION 3: Limiting Reactants and Percentage Yield

1. _____ The actual yield of a reaction is 22 g and the theoretical yield is 25 g. Calculate the percentage yield.

2. 6.0 mol of N₂ are mixed with 12.0 mol of H₂ according to the following equation:

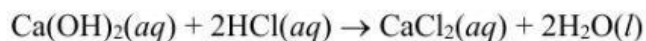


- _____ a. Which chemical is in excess? What is the excess in moles?

- _____ b. Theoretically, how many moles of NH₃ will be produced?

- _____ c. If the percentage yield of NH₃ is 80%, how many moles of NH₃ are actually produced?

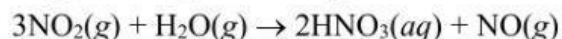
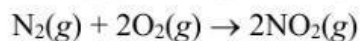
3. 0.050 mol of Ca(OH)₂ are combined with 0.080 mol of HCl according to the following equation:



- _____ a. What is the limiting reactant in this neutralization reaction?

- _____ b. How many grams of water will form in this reaction?

4. Acid rain can form in a two-step process, producing $\text{HNO}_3(aq)$.



_____ a. A car burns 420 g of N_2 according to the above equations.
How many grams of HNO_3 will be produced?

_____ b. How many grams of HNO_3 would have been produced
with a percentage yield of 85%?

5. _____ If a reaction's theoretical yield is 8.0 g and the actual yield is
6.0 g, what is the percentage yield?

6. Joseph Priestley generated oxygen gas by strongly heating mercury (II) oxide
according to the following equation:



_____ a. If 15.0 g HgO decompose, how many moles of HgO does
this represent?

_____ b. How many grams of O_2 are theoretically produced?

_____ c. If the percentage yield is 95.0%, how many grams of O_2 are
actually collected?