

Answers to problems in page 317

Answers to Practice Problems F

1. N_2 is limiting, 85.3%
2. $\text{C}_2\text{H}_5\text{OH}$ is limiting, 80.0%
3. Br_2 is limiting, 90.9%

Homework GENERAL

Additional Practice

1. When 4.00×10^5 kg of H_2 is added to an excess of N_2 , 1.04×10^6 kg of NH_3 is produced. What is the percentage yield of the reaction? **Ans. 46.2%**
2. A standard laboratory preparation of iodine is the following reaction.
$$2\text{NaI}(aq) + \text{MnO}_2(s) + 2\text{H}_2\text{SO}_4(aq) \rightarrow \text{Na}_2\text{SO}_4(aq) + \text{MnSO}_4(aq) + 2\text{H}_2\text{O}(l) + \text{I}_2(s)$$
Balance the equation, then find the percentage yield of I_2 if the actual yield of I_2 was 39.8 g when the amount of NaI used was 62.6 g. **Ans. 75.1%**
3. A 15.0 g sample of magnesium reacts with hydrochloric acid to form magnesium chloride and hydrogen. During the reaction, 46.6 g of magnesium chloride was formed. What was the percentage yield? **Ans. 79.3%**