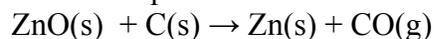


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| CHAPTER 8 | Limiting Reactant Problems | BLM 8.1.2 |
| ASSESSMENT | | |
| | | |

1. Extraction of zinc from zinc oxide takes place as follows:



In an industrial setting, 17.2 mol of zinc oxide are reacted with 43.2 mol of carbon in the form of charcoal. Identify the limiting reactant.

2. If 1.00 kg of glucose (5.55 mol) is reacted with 34.0 mol oxygen during the process of cellular respiration, which reactant is limiting? Why does your answer seem logical?

3. Acrylic, a common synthetic fibre, is formed from acrylonitrile. Acrylonitrile is formed in the following reaction:



What is the limiting reactant when 126 g of $\text{C}_3\text{H}_6(\text{g})$ reacts with 175 g of NO ?

4. Calcium fluoride reacts with concentrated sulfuric acid to produce calcium sulfate and the highly toxic gas hydrogen fluoride. Determine the limiting reactant when 10.0 g of calcium fluoride reacts with 15.5 g of sulfuric acid.

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| CHAPTER 8 | Limiting Reactant Problems (continued) | BLM 8.1.2 |
| ASSESSMENT | | |

5. One method of ammonia production occurs when lithium nitride reacts with water to produce ammonia and lithium hydroxide. If 4.87 g of lithium nitride reacts with 7.74 g of water, find the limiting reactant.

6. When 0.25 g of aluminium reacts with 0.51 g of copper(II) chloride, which reactant is limiting?

7. A 33.76 g mass of zinc reacts with 54.08 g of hydrogen chloride. Which reactant is in excess?

8. Chloride dioxide is a reactive oxidizing agent. It is used to purify water. The products of the reaction are chloric acid and hydrochloric acid. If 71.00 g of chloride dioxide is mixed with 19.00 g of water, what is the limiting reactant?