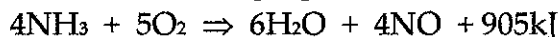


## Stoichiometry Review

1. Given the following equations:



- How many moles of  $\text{H}_2\text{O}$  is produced when 2.6mol of  $\text{NH}_3$  are reacted with an excess of oxygen?
- How many moles of  $\text{NO}$  are produced when 0.362mol of  $\text{O}_2$  are reacted with an excess of  $\text{NH}_3$  ?
- How many moles of  $\text{O}_2$  are needed to react with 54.0g of  $\text{NH}_3$  ?
- If 60.0g of  $\text{H}_2\text{O}$  was produced, how many moles of  $\text{NO}$  was also produced?
- If 8.96g of  $\text{NH}_3$  of react, what mass of  $\text{NO}$  is produced?

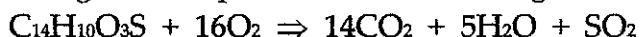
2. What mass of sulfur is produced when 6.0mol of  $\text{SO}_3$  decomposes to produce sulfur and oxygen gas?

3. How many grams of  $\text{NaCl}$  would be produced from 2.50mol of  $\text{Na}_2\text{SO}_4$  reacting with an excess of  $\text{BaCl}_2$  ?

4. What mass of chlorine gas is required to react with carbon in order to produce 355g of carbon tetrachloride?

5. Hydrogen sulfide ( $\text{H}_2\text{S}$ ) reacts with oxygen gas to produce water and sulfur dioxide. If, in a reaction, 9.0g of water is produced, how many grams of oxygen would have been used up?

6. An organic compound burns according to this reaction:



- What volume of  $\text{CO}_2$  will be produced when 0.316g of  $\text{C}_{14}\text{H}_{10}\text{O}_3\text{S}$  are burned?
- What mass of  $\text{C}_{14}\text{H}_{10}\text{O}_3\text{S}$  is required to produce 16.5L of  $\text{SO}_2$  gas?

7. What volume of  $\text{O}_2$  would be required for complete combustion of 120g of  $\text{C}_6\text{H}_{12}\text{O}_6$  ?

8. What volume of  $\text{O}_2$  is produced if 8.73L of  $\text{H}_2$  is produced from the electrolysis of water?  $2\text{H}_2\text{O} \Rightarrow 2\text{H}_2 + \text{O}_2$

9. What volume of carbon dioxide is required to produce 50.0L of carbon monoxide according to the following reaction?  $\text{CO}_2 + \text{C} \Rightarrow 2\text{CO}$
10. 50.0g of oxygen is available for the combustion of 25.0g of acetylene( $\text{C}_2\text{H}_2$ ). Write a balanced equation for the combustion (what are products for a combustion? – see past notes). What is the limiting reactant? What mass of  $\text{CO}_2$  is produced? What mass of excess reactant is left over?
11. 5.0g of hydrochloric acid is mixed with 24.0g of magnesium hydroxide. Write a balanced equation for the neutralization. What is the limiting reactant? What mass of water is produced? What mass of excess reactant is left over?
12. Define stoichiometry, stoichiometric ratio, limiting reactant.