

Accelerated Chemistry Practice Quiz

Name: _____

Period: _____

1. Calculate the volume of carbon dioxide produced when 44.0 g of C_4H_{10} is combusted. The density of CO_2 is 1.47 g/L.
2. Calculate the mass of silver produced when 15.0 moles of Copper is reacted with excess Silver nitrate solution. *Copper (II) product formed.*
3. How many molecules of Chlorine gas must react with 10.0 grams of Aluminum to produce Aluminum Chloride
4. If 30.0 grams of Benzene (C_6H_6) react with 65.0 grams of Bromine. Calculate the percent yield and experimental error of C_6H_5Br . Identify the limiting reactant and the excess reactant. The actual yield of the product (C_6H_5Br) is 56.7 grams. The equation for this reaction is: $C_6H_6 + Br_2 \rightarrow C_6H_5Br + HBr$
5. Calculate the theoretical yield of zinc chloride can be produced if 10.0grams of Zinc react with 10.0 grams of HCl? Which Reactant is limiting? Which Reactant is in Excess? If 17.5 grams were produced during the lab – calculate the percent yield and percent error. Balance the equation first. Answers all five questions.



For fun if you want calculate the amount of excess reactant left over after the reaction is complete

Accelerated Chemistry Practice Quiz

Name: Key

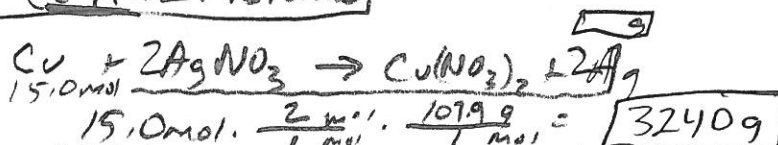
Period:

1. Calculate the volume of carbon dioxide produced when 44.0 g of C_4H_{10} is combusted. The density of CO_2 is 1.47 g/L.

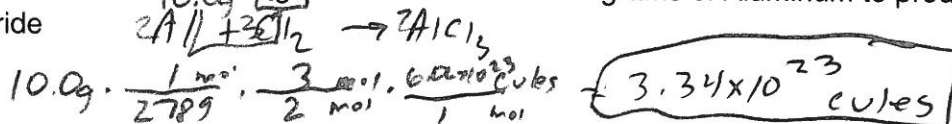
$$2C_4H_{10} + 13O_2 \rightarrow 8CO_2 + 10H_2O$$

$$44.0g \cdot \frac{1 \text{ mol}}{58g} \cdot \frac{8 \text{ mol}}{2 \text{ mol}} \cdot \frac{44.0g}{1 \text{ mol}} \cdot \frac{1 \text{ L}}{1.47g} = 90.8L$$

2. Calculate the mass of silver produced when 15.0 moles of Copper is reacted with excess Silver nitrate solution. (Copper II is formed)



3. How many molecules of Chlorine gas must react with 10.0 grams of Aluminum to produce Aluminum Chloride



4. If 30.0 grams of Benzene (C_6H_6) react with 65.0 grams of Bromine. Calculate the percent yield and experimental error of C_6H_5Br . Identify the limiting reactant and the excess reactant. The actual yield of the product (C_6H_5Br) is 56.7 grams. The equation for this reaction is: $C_6H_6 + Br_2 \rightarrow C_6H_5Br + HBr$

$$30.0g \cdot \frac{1 \text{ mol}}{78g} \cdot \frac{1 \text{ mol}}{1 \text{ mol}} \cdot \frac{156g}{1 \text{ mol}} = 60.3g$$

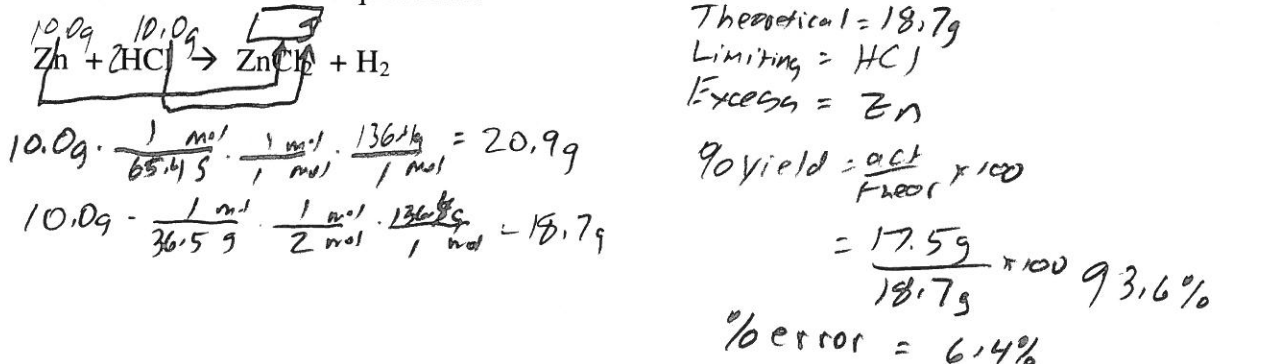
$$65.0g \cdot \frac{1 \text{ mol}}{159.8g} \cdot \frac{1 \text{ mol}}{1 \text{ mol}} \cdot \frac{156.9g}{1 \text{ mol}} = 63.8g$$

Limiting C_6H_6 Excess Br_2

$$\text{Error} = 60.3g - 56.7g = 3.6g$$

$$\% \text{ yield} = \frac{\text{act}}{\text{theor}} \times 100 = \frac{56.7g}{60.3g} \times 100 = 94.0\%$$

5. Calculate the theoretical yield of zinc chloride can be produced if 10.0grams of Zinc react with 10.0 grams of HCl? Which Reactant is limiting? Which Reactant is in Excess? If 17.5 grams were produced during the lab – calculate the percent yield and percent error. Balance the equation first. Answers all five questions.



For fun if you want calculate the amount of excess reactant left over after the reaction is complete

$$10.0g \cdot \frac{1 \text{ mol}}{36.5g} \cdot \frac{1 \text{ mol}}{2 \text{ mol}} \cdot \frac{65.4g}{1 \text{ mol}} = 8.96g$$

1.04g Left over