

Name:
Date:
Period:

14

6.2 Tracked Assignment (Obj 1: e&f)

Directions: Make the following conversions. SHOW WORK (Problems without work receive no credit) AND INCLUDE UNITS.

1. Find grams for the following

a. $4.23 \text{ mol AlPO}_4 \times \frac{121.95 \text{ g AlPO}_4}{1 \text{ mol AlPO}_4} = 516 \text{ g AlPO}_4$

$$\begin{array}{l} 1 \text{ Al} \times 26.98 = 26.98 \\ 1 \text{ P} \times 30.97 = 30.97 \\ 4 \text{ O} \times 16.00 = 64.00 \\ \hline 121.95 \text{ g} \end{array}$$

b. $5.46 \text{ mol As} \times \frac{74.92 \text{ g As}}{1 \text{ mol As}} = 409 \text{ g As}$

c. $.095 \text{ mol Sr(OH)}_2 \times \frac{121.64 \text{ g Sr(OH)}_2}{1 \text{ mol Sr(OH)}_2} = 11.6 \text{ g Sr(OH)}_2$

$$\begin{array}{l} 1 \text{ Sr} \times 87.62 = 87.62 \\ 2 \text{ O} \times 16.00 = 32.00 \\ 2 \text{ H} \times 1.01 = 2.02 \\ \hline 121.64 \end{array}$$

d. $17 \text{ mol C}_6\text{H}_{12}\text{O}_6 \times \frac{180.18 \text{ g C}_6\text{H}_{12}\text{O}_6}{1 \text{ mol C}_6\text{H}_{12}\text{O}_6} = 3063 \text{ g C}_6\text{H}_{12}\text{O}_6$

$$\begin{array}{l} 6 \text{ C} \times 12.01 = 72.06 \\ 12 \text{ H} \times 1.01 = 12.12 \\ 6 \text{ O} \times 16.00 = 96.00 \\ \hline 180.18 \end{array}$$

2. Find mol for the following

a. $50.2 \text{ g NO}_3 \times \frac{1 \text{ mol NO}_3}{62.01 \text{ g NO}_3} = .810 \text{ mol NO}_3$

$$\begin{array}{l} 1 \text{ N} \times 14.01 = 14.01 \\ 3 \text{ O} \times 16.00 = 48.00 \\ \hline 62.01 \end{array}$$

b. $413 \text{ g CuSO}_4 \times \frac{1 \text{ mol CuSO}_4}{159.62 \text{ g CuSO}_4} = 2.59 \text{ mol CuSO}_4$

$$\begin{array}{l} 1 \text{ Cu} \times 63.55 = 63.55 \\ 1 \text{ S} \times 32.07 = 32.07 \\ 4 \text{ O} \times 16.00 = 64.00 \\ \hline 159.62 \text{ g} \end{array}$$

c. $8.6 \text{ g Ti} \times \frac{1 \text{ mol Ti}}{47.88 \text{ g Ti}} = .180 \text{ mol Ti}$

d. $93 \text{ g Mn}_2(\text{CO}_3)_3 \times \frac{1 \text{ mol Mn}_2(\text{CO}_3)_3}{289.91 \text{ g Mn}_2(\text{CO}_3)_3} = .321 \text{ mol Mn}_2(\text{CO}_3)_3$

$$\begin{array}{l} 2 \text{ Mn} \times 54.94 = 109.88 \\ 3 \text{ C} \times 12.01 = 36.03 \\ 9 \text{ O} \times 16.00 = 144.00 \\ \hline 289.91 \text{ g} \end{array}$$

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3. Perform the following conversions

a. 25 L SO₂ to mol SO₂

$$25 \text{ L SO}_2 \times \frac{1 \text{ mol SO}_2}{22.4 \text{ L SO}_2} = 1.12 \text{ mol SO}_2$$

b. 3.40 mol H₂S to L H₂S

$$3.40 \text{ mol H}_2\text{S} \times \frac{22.4 \text{ L H}_2\text{S}}{1 \text{ mol H}_2\text{S}} = 76.16 \text{ L H}_2\text{S}$$

c. 67 L N₂O to mole N₂O

$$67 \text{ L N}_2\text{O} \times \frac{1 \text{ mol N}_2\text{O}}{22.4 \text{ L N}_2\text{O}} = 2.99 \text{ mol N}_2\text{O}$$

d. 7.5 mole NO₃ to L NO₃

$$7.5 \text{ mol NO}_3 \times \frac{22.4 \text{ L NO}_3}{1 \text{ mol NO}_3} = 168 \text{ L NO}_3$$

e. 453 L SF₆ to mol SF₆

$$453 \text{ L SF}_6 \times \frac{1 \text{ mol SF}_6}{22.4 \text{ L SF}_6} = 20.2 \text{ mol SF}_6$$

f. 0.644 mol C₃H₈ to L C₃H₈

$$0.644 \text{ mol C}_3\text{H}_8 \times \frac{22.4 \text{ L C}_3\text{H}_8}{1 \text{ mol C}_3\text{H}_8} = 14.4 \text{ L C}_3\text{H}_8$$