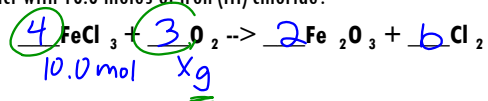


**Practice:**

How many grams of oxygen gas is required to react with 10.0 moles of iron (III) chloride?



$$10.0 \text{ mol FeCl}_3 \times \frac{3 \text{ mol O}_2}{4 \text{ mol FeCl}_3} \times \frac{32 \text{ g O}_2}{1 \text{ mol O}_2} = 240 \text{ g O}_2$$

Jan 14-7:34 AM

**Practice:**

What is the molar mass of NaCl?

$$\text{Na} = 1 \times 23 = 23$$

$$\text{Cl} = 1 \times 35 = 35$$

$$\underline{\hspace{1.5cm}} = 58 \text{ g/mol}$$

Jan 14-7:34 AM

**Practice:**

Determine the number of grams in  $2.25 \times 10^{22}$  molecules of carbon monoxide.

$$2.25 \times 10^{22} \text{ molec. CO} \times \frac{1 \text{ mol CO}}{6.02 \times 10^{23} \text{ molec. CO}} \times \frac{28 \text{ g CO}}{1 \text{ mol CO}} = 1.05 \text{ g CO}$$

$\text{C} = 1 \times 12 = 12$   
 $\text{O} = 1 \times 16 = 16$   
 $\underline{\hspace{1.5cm}} = 28$

Jan 14-7:34 AM

**Practice:**

Determine the number of formula units in 3.63 moles of  $\text{MgSO}_4$ .

$$3.63 \text{ mol MgSO}_4 \times \frac{6.02 \times 10^{23} \text{ fr.u.}}{1 \text{ mol MgSO}_4} = 2.19 \times 10^{24} \text{ fr.u. MgSO}_4$$

Jan 14-7:34 AM

**Practice:**

Determine the percent composition of sodium in  $\text{Na}_3\text{PO}_4$ .

$$\text{Na} = 3 \times 23 = 69$$

$$\text{P} = 1 \times 31 = 31$$

$$\text{O} = 4 \times 16 = 64$$

$$\underline{\hspace{1.5cm}} = 164 \text{ g/mol}$$

$$\frac{69 \text{ g/mol}}{164 \text{ g/mol}} \times 100 = 42\%$$

Jan 14-7:34 AM

**Practice:**

Determine if the following are empirical or molecular formulas:

- $\text{CaCl}_2$  - E
- $\text{C}_6\text{H}_{12}\text{O}_6$  - M  $\text{CH}_2\text{O}$
- $\text{H}_2\text{O}_2$  - M  $\text{HO}$

Jan 14-7:34 AM

**Review:**  $\frac{.580g}{.692g} \times 100 = 84\%$   $\frac{a.y}{f.y} \times 100$

Determine the percent yield of the experiment below.

$2 \text{ Al(OH)}_3 + 3 \text{ H}_2\text{SO}_4 \rightarrow 6 \text{ H}_2\text{O} + \text{Al}_2(\text{SO}_4)_3$

Initial Mass of Al(OH) <sub>3</sub>	1.00 grams
Mass of Beaker and Reactants	15.580 grams
Mass of Solid Product	15.000 grams
Mass of gas product (H <sub>2</sub> O)	.580g - act. y.

$1.00g \text{ Al(OH)}_3 \times \frac{1 \text{ mol Al(OH)}_3}{78g \text{ Al(OH)}_3} \times \frac{6 \text{ mol H}_2\text{O}}{2 \text{ mol Al(OH)}_3} \times \frac{18g \text{ H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = .692g \text{ H}_2\text{O}$

Jan 10-3:24 PM