Practice:

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

$4\ FeCl_3 + 3\ O_2 \rightarrow 2\ Fe_2O_3 + 6\ Cl_2$

10.0 mol x g

$10.0\ mol\ FeCl_3 \times \frac{3\ mol\ O_2}{4\ mol\ FeCl_3} \times \frac{32\ g\ O_2}{1\ mol\ O_2} =$

$= 240\ g\ O_2$

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Practice:

What is the molar mass of NaCl?

Na = 1 x 23 = 23

Cl = 1 x 35 = 35

58 g/mol

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Practice:

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

mass

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

$= 1.05\ g\ CO$

C = 1 x 12 = 12

O = 1 x 16 = 16

28

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Practice:

Determine the number of formula units in 3.63 moles of $MgSO_4$.

$3.63\ mol\ MgSO_4 \times \frac{6.02 \times 10^{23}\ for.u.}{1\ mol\ MgSO_4} =$

$2.19 \times 10^{24}\ for.u.\ MgSO_4$

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Practice:

Determine the percent composition of sodium in Na_3PO_4.

Na = 3 x 23 = 69

P = 1 x 31 = 31

O = 4 x 16 = 64

164 g/mol

$\frac{69\ g/mol}{164\ g/mol} \times 100$

= 42%

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Practice:

Determine if the following are empirical or molecular formulas:

1. $CaCl_2$ – E
2. $C_6H_{12}O_6$ – M CH_2O
3. H_2O_2 M HO

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Review:

Determine the percent yield of the experiment below.

$2\ Al(OH)_3 + 3\ H_2SO_4 \rightarrow 6\ H_2O + Al_2(SO_4)_3$

Initial Mass of $Al(OH)_3$	1.00 grams
Mass of Beaker and Reactants	15.580 grams
Mass of Solid Product	15.000 grams
Mass of gas product (H_2O)	.580g – act. y.

$1.00g\ Al(OH)_3 \times \frac{1\ mol\ Al(OH)_3}{78g\ Al(OH)_3} \times \frac{6\ mol\ H_2O}{2\ mol\ Al(OH)_3} \times \frac{18g\ H_2O}{1\ mol\ H_2O} = .692g\ H_2O$

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