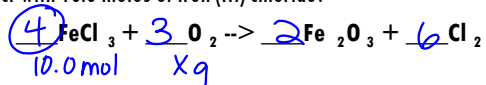


Practice:

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



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

↑
mole ratio

= 240 g O₂

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Practice:

What is the molar mass of NaCl?

$$\begin{aligned} \text{Na} &= 1 \times 23 = 23 \\ \text{Cl} &= 1 \times 35 = 35 \\ &= 58 \text{ g/mol} \end{aligned}$$

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Practice:

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

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

= 1.05 g CO

C = 1 × 12 = 12
O = 1 × 16 = 16
28

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Practice:

Determine the number of formula units in 3.63 moles of MgSO₄.

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

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Practice:

Determine the percent composition of sodium in Na₃PO₄.

$$\begin{aligned} \text{Na} &= 3 \times 23 = 69 \leftarrow 69 \text{ g/mol} \\ \text{P} &= 1 \times 31 = 31 && 164 \text{ g/mol} \times 100 \\ \text{O} &= 4 \times 16 = 64 \end{aligned}$$

164 g/mol

42%

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Practice:

Determine if the following are empirical or molecular formulas:

1. CaCl₂ E
2. C₆H₁₂O₆ M CH₂O
3. H₂O₂ M HO

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Review:

Determine the percent yield of the experiment below.

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

$\frac{\text{act. y.}}{\text{the. y.}} \times 100 =$
 $\frac{15.000\text{g}}{15.580\text{g}} \times 100 =$

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 ₂ O)	.580g

$1.00\text{g Al(OH)}_3 \times \frac{1\text{mol Al(OH)}_3}{78\text{g Al(OH)}_3} \times \frac{6\text{mol H}_2\text{O}}{2\text{mol Al(OH)}_3} \times \frac{18\text{g H}_2\text{O}}{1\text{mol H}_2\text{O}} = .692\text{g H}_2\text{O}$
 $\frac{.580\text{g}}{.692\text{g}} \times 100 = 84\%$

Jan 10-3:24 PM