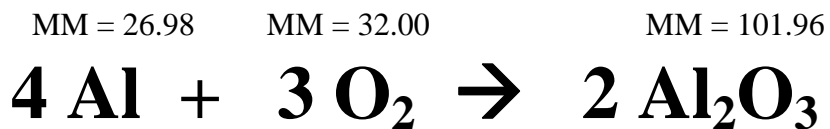


AR Chemistry: Review for Friday's Quiz

Gram to Gram



1. How many grams of Al_2O_3 will form if you burn 34.0 grams of Al?
2. How many grams of O_2 are needed to react with 98.3 grams of Al?
3. You obtain 39.2 grams of Al_2O_3 . How many grams of O_2 were reacted?

Molecular Mass

4. What is the molecular mass for (show work):
 - a. H_2O
 - b. CaCO_3
 - c. $\text{Mg}(\text{OH})_2$
 - d. $\text{Ca}_3(\text{PO}_4)_2$

AR Chemistry: Review for Friday's Quiz

Gram to Gram

$$\text{MM} = 26.98$$

$$\text{MM} = 32.00$$

$$\text{MM} = 101.96$$



1. How many grams of Al_2O_3 will form if you burn 34.0 grams of Al?

$$34.0 \text{ g Al} \times \frac{1 \text{ mol Al}}{26.98 \text{ g Al}} \times \frac{2 \text{ mol Al}_2\text{O}_3}{4 \text{ mol Al}} \times \frac{101.96 \text{ g Al}_2\text{O}_3}{1 \text{ mol Al}_2\text{O}_3} = \mathbf{64.2 \text{ g Al}_2\text{O}_3}$$

2. How many grams of O_2 are needed to react with 98.3 grams of Al?

$$98.3 \text{ g Al} \times \frac{1 \text{ mol Al}}{26.98 \text{ g Al}} \times \frac{3 \text{ mol O}_2}{4 \text{ mol Al}} \times \frac{32.00 \text{ g O}_2}{1 \text{ mol O}_2} = \mathbf{87.4 \text{ g O}_2}$$

3. You obtain 39.2 grams of Al_2O_3 . How many grams of O_2 were reacted?

$$39.2 \text{ g Al}_2\text{O}_3 \times \frac{1 \text{ mol Al}_2\text{O}_3}{101.96 \text{ g Al}_2\text{O}_3} \times \frac{3 \text{ mol O}_2}{2 \text{ mol Al}_2\text{O}_3} \times \frac{32.00 \text{ g O}_2}{1 \text{ mol O}_2} = \mathbf{18.5 \text{ g O}_2}$$

Molecular Mass

4. What is the molecular mass for (show work):

a. H_2O

$$\begin{aligned} \text{H: } & 2 \times 1.01 = 2.02 \\ \text{O: } & 1 \times 16.00 = \underline{16.00} \\ & \mathbf{18.02} \end{aligned}$$

b. CaCO_3

$$\begin{aligned} \text{Ca: } & 1 \times 40.08 = 40.08 \\ \text{C: } & 1 \times 12.01 = 12.01 \\ \text{O: } & 3 \times 16.00 = \underline{48.00} \\ & \mathbf{100.09} \end{aligned}$$

c. $\text{Mg}(\text{OH})_2$

$$\begin{aligned} \text{Mg: } & 1 \times 24.31 = 24.32 & \text{Ca: } & 3 \times 40.08 = 120.24 \\ \text{O: } & 2 \times 16.00 = 32.00 & \text{P: } & 2 \times 30.97 = 61.94 \\ \text{H: } & 2 \times 1.01 = \underline{2.02} & \text{O: } & 8 \times 16.00 = \underline{128.00} \\ & \mathbf{58.34} & & \mathbf{310.18} \end{aligned}$$

d. $\text{Ca}_3(\text{PO}_4)_2$ ----->