

#Jenny



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Cool! I'am really happy

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My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

- b) 6.45 moles  $\text{C}_2\text{O}_2$   $F_w = 152.0 \text{ g kmol}^{-1}$   $\frac{6.45 \text{ mol} \times 152.0 \text{ g}}{1 \text{ kmol}} = 980 \text{ g}$   $\text{Kug}$
- c) 0.144 mole  $\text{K}_2\text{S}$   $F_w = 110.3 \text{ g kmol}^{-1}$   $\frac{0.144 \text{ mol} \times 110.3 \text{ g}}{1 \text{ kmol}} = 15.9 \text{ g}$
- d) 5.0 moles  $\text{CaH}_2\text{O}_4$   $180.0 \text{ g kmol}^{-1}$   $\frac{5.0 \text{ mol} \times 180.0 \text{ g}}{1 \text{ kmol}} = 900 \text{ g}$   $\text{or } 9.0 \times 10^2 \text{ g}$
- e)  $5.10 \times 10^4$  mole  $\text{NaCl}$   $F_w = 58.5 \text{ g kmol}^{-1}$   $\frac{5.10 \times 10^4 \text{ mol} \times 58.5 \text{ g}}{1 \text{ kmol}} = 0.298 \text{ g}$   $\text{or } 2.98 \times 10^2 \text{ g}$

Solve the following stoichiometry problems. Write a balanced equation for each.

- a) How many moles of hydrogen gas are needed to react with 15.1 g chlorine gas, to produce hydrogen chloride gas? Equation:  $\text{H}_2 + \text{Cl}_2 \rightarrow 2 \text{HCl}$
- $15.1 \text{ g} \times \left( \frac{1 \text{ mol}}{71.0 \text{ g}} \right) = 0.213 \text{ mol Cl}_2$
- $0.213 \text{ mol Cl}_2 \left( \frac{1 \text{ mol H}_2}{1 \text{ mol Cl}_2} \right) = 0.213 \text{ mol H}_2$   $\underline{0.213 \text{ mol H}_2}$
- b) How many grams of oxygen gas are needed to react completely with 16.2 g of hydrogen gas, to produce water? Equation:  $2 \text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O}$
- $16.2 \text{ g} \times \left( \frac{1 \text{ mol}}{4.0 \text{ g}} \right) = 4.05 \text{ mol H}_2$
- $4.05 \text{ mol H}_2 \left( \frac{1 \text{ mol O}_2}{2 \text{ mol H}_2} \right) = 2.025 \text{ mol O}_2$
- $2.025 \text{ mol O}_2 \left( \frac{32 \text{ g}}{1 \text{ mol}} \right) = 64.8 \text{ g O}_2$   $\underline{64.8 \text{ g O}_2}$
- c) How many moles of calcium oxide are produced when 36.5 g of calcium react completely with oxygen gas? Equation:  $2 \text{Ca} + \text{O}_2 \rightarrow 2 \text{CaO}$
- $36.5 \text{ g} \left( \frac{1 \text{ mol}}{40.1 \text{ g}} \right) = 0.910 \text{ mol Ca}$
- $0.910 \text{ mol Ca} \left( \frac{2 \text{ mol CaO}}{2 \text{ mol Ca}} \right) = 0.910 \text{ mol CaO}$   $\underline{0.910 \text{ mol CaO}}$
- d) How many grams of aluminium are required to produce 410 g of aluminium oxide, through reaction with oxygen gas? Equation:  $4 \text{Al} + 3 \text{O}_2 \rightarrow 2 \text{Al}_2\text{O}_3$
- $410 \text{ g} \left( \frac{1 \text{ mol}}{102 \text{ g}} \right) = 4.02 \text{ mol Al}_2\text{O}_3$
- $4.02 \text{ mol Al}_2\text{O}_3 \left( \frac{4 \text{ mol Al}}{2 \text{ mol Al}_2\text{O}_3} \right) = 8.04 \text{ mol Al}$
- $8.04 \text{ mol Al} \left( \frac{27 \text{ g}}{1 \text{ mol}} \right) = 217 \text{ g Al}$   $\underline{217 \text{ g Al}}$
- e) How many grams of solid iodine are produced by the decomposition of 25.4 grams of hydrogen iodide gas? Equation:  $2 \text{HI} \rightarrow \text{H}_2 + \text{I}_2$
- $25.4 \text{ g} \left( \frac{1 \text{ mol}}{127.9 \text{ g}} \right) = 0.199 \text{ mol HI}$
- $0.199 \text{ mol HI} \left( \frac{1 \text{ mol I}_2}{2 \text{ mol HI}} \right) = 0.0995 \text{ mol I}_2$
- $0.0995 \text{ mol I}_2 \left( \frac{253.8 \text{ g}}{1 \text{ mol}} \right) = 25.2 \text{ g I}_2$   $\underline{25.2 \text{ g I}_2}$

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**Chemistry Work Answers Ch 12 Stoichiometry**