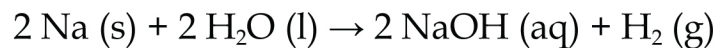


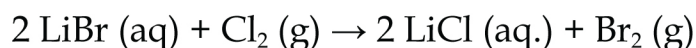
Name : Date :

STOICHIOMETRY Worksheet

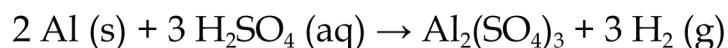
1. How many moles of sodium will react with water to produce 4.0 mol of hydrogen in the following reaction?



2. How many moles of lithium chloride will be formed by the reaction of chlorine with 0.046 mol of lithium bromide in the following reaction?



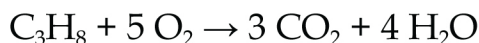
3. Aluminum will react with sulfuric acid in the following reaction.



a. How many moles of H_2SO_4 will react with 18 mol of Al?

b. How many moles of each product will be produced?

4. Propene burns in excess oxygen according to the following reaction.



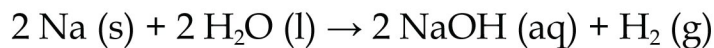
a. How many moles of each CO_2 and H_2O are formed from 3.85 mol of propane?

b. If 0.647 mol of oxygen is used to burn propane, how many moles of each CO_2 and H_2O are produced? How many moles of C_3H_8 are consumed?

STOICHIOMETRY Worksheet

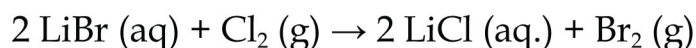
Answers

1. How many moles of sodium will react with water to produce 4.0 mol of hydrogen in the following reaction?



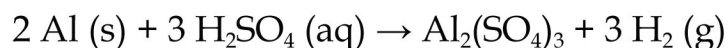
$$4 \text{ mol H}_2 \times (2 \text{ mol Na} / 1 \text{ mol H}_2) = 8 \text{ mol Na}$$

2. How many moles of lithium chloride will be formed by the reaction of chlorine with 0.046 mol of lithium bromide in the following reaction?



$$0.046 \text{ mol LiBr} \times (2 \text{ mol LiCl} / 2 \text{ mol LiBr}) = 0.046 \text{ mol LiCl}$$

3. Aluminum will react with sulfuric acid in the following reaction.



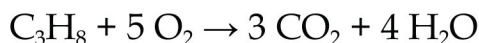
a. How many moles of H_2SO_4 will react with 18 mol of Al?

$$18 \text{ mol Al} \times (3 \text{ mol H}_2\text{SO}_4 / 2 \text{ mol Al}) = 27 \text{ mol of H}_2\text{SO}_4$$

b. How many moles of each product will be produced?

$$9 \times 1 = 9 \text{ mol Al}_2(\text{SO}_4)_3 \text{ and } 9 \times 3 = 27 \text{ mol H}_2$$

4. Propene burns in excess oxygen according to the following reaction.



a. How many moles of each CO_2 and H_2O are formed from 3.85 mol of propane?

$$3.85 \text{ mol C}_3\text{H}_8 \times (3 \text{ mol CO}_2 / 1 \text{ mol C}_3\text{H}_8) = 11.55 \text{ mol CO}_2$$

$$3.85 \text{ mol C}_3\text{H}_8 \times (4 \text{ mol H}_2\text{O} / 1 \text{ mol C}_3\text{H}_8) = 15.4 \text{ mol H}_2\text{O}$$

b. If 0.647 mol of oxygen is used to burn propane, how many moles of each CO_2 and H_2O are produced? How many moles of C_3H_8 are consumed?

$$0.647 \text{ mol O}_2 \times (3 \text{ mol CO}_2 / 5 \text{ mol O}_2) = 0.388 \text{ mol CO}_2$$

$$0.647 \text{ mol O}_2 \times (4 \text{ mol H}_2\text{O} / 5 \text{ mol O}_2) = 0.518 \text{ mol H}_2\text{O}$$

$$0.647 \text{ mol O}_2 \times (1 \text{ mol C}_3\text{H}_8 / 5 \text{ mol O}_2) = 0.129 \text{ mol C}_3\text{H}_8$$