

Name: \_\_\_\_\_

Block: \_\_\_\_\_

## Stoichiometry #2: Mass-Mass Problems

1. Given the following equation:  $2\text{K} + \text{Cl}_2 \longrightarrow 2\text{KCl}$

(a) How many grams of KCl would be produced from 2.50 g of K and excess  $\text{Cl}_2$ ?

(b) How many grams of KCl would be produced from 1.00 g of  $\text{Cl}_2$  and excess K?

2. Given the following equation:  $\text{Na}_2\text{O} + \text{H}_2\text{O} \longrightarrow 2\text{NaOH}$

(a) If 124 g of  $\text{Na}_2\text{O}$  is reacted with excess  $\text{H}_2\text{O}$ , how much NaOH will be made?

(b) How many grams of  $\text{Na}_2\text{O}$  would be required to produce 80 g of NaOH?

3. Given the following equation:  $2\text{NaClO}_3 \longrightarrow 2\text{NaCl} + 3\text{O}_2$

(a) 12.00 mol of  $\text{NaClO}_3$  will produce how many grams of  $\text{O}_2$ ?

(b) How many grams of NaCl are produced when 80.0 g of  $\text{O}_2$  are produced?

4. Given the following equation:  $2 \text{Mg} + \text{O}_2 \longrightarrow 2 \text{MgO} + 1203.2 \text{kJ}$

(a) What mass of magnesium is needed to completely react with 48.0 g of oxygen?

(b) How many grams of MgO are produced?

(c) How much energy is produced?

5. Given the following equation:  $4 \text{Al} + 3 \text{O}_2 \longrightarrow 2 \text{Al}_2\text{O}_3 + 3351.4 \text{kJ}$

(a) How many moles of Al are needed to react with 3.50 mol of  $\text{O}_2$ ?

(b) If 382 g of  $\text{Al}_2\text{O}_3$  were produced, how many grams of Al reacted?

(c) If the reaction consumed 2 mol of Al, how much energy was produced?