

LIMITING REACTANT (LIMITING REAGENT) PRACTICE (#5)

From Bauck and ChemTeam

- 1) Potassium reacts with iodine to form potassium iodide.
6.70 mol of potassium and 3.20 mol of iodine are available in lab.
 - a) Write the balanced equation.
 - b) Calculate and identify the limiting reactant.
 - c) Calculate and identify the excess reactant.
 - d) How many moles of product form?
 - e) How many moles of excess reactant are left over?

- 2) 8.00 moles of oxygen is available to react with 7.00 moles of phosphorus. Diphosphorus pentoxide is formed.
 - a) Write the balanced equation.
 - b) Calculate and identify the limiting reagent.
 - c) Calculate and identify the excess reagent.
 - d) How many moles of product form?
 - e) How many moles of excess reagent are left over?

- 3) Hydrogen reacts with carbon to form methane gas (CH_4).
7.0 moles of hydrogen and 5.0 moles of carbon are used in the reaction.
 - a) Write the balanced equation.
 - b) Calculate and identify the limiting reactant.
 - c) Calculate and identify the excess reactant.
 - d) How many moles of product form?
 - e) How many moles of excess reactant are left over?

- 4) In the incomplete combustion of sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$), 0.789 mol of sucrose and 0.789 mol of oxygen are available to react.
 - a) Write the balanced equation.
 - b) Calculate and identify the limiting reagent.
 - c) Calculate and identify the excess reagent.
 - d) How many grams of products form? (2 separate answers)
 - e) How many grams of excess reagent are left over?

QUESTION 5 FOR CHEM I HONORS ONLY:

- 5) In the complete combustion of sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$), 20.00 g of sucrose and 20.00 g of oxygen are available to react. (Calculate all answers in grams).
 - a) Write the balanced equation.
 - b) Calculate and identify the limiting reagent.
 - c) Calculate and identify the excess reagent.
 - d) How many grams of carbon dioxide form?
 - e) How many grams of excess reagent are left over?