



I'm not robot



**I am not robot!**

Since the oxygen required is greater than that on hand, it will run out before the sucrose. The excess reactant is What is the limiting reactant if g of Mg is reacted with L of oxygen at STP? Both of the following give you the same answer. Subtract the amount of HCl that would react (g HCl) and subtract it from the starting amount of HCl (g);  $g - g = g$  HCl excess Oxygen on hand  $\Rightarrow g/g/mol = mol$ . To identify Teacher Resources – Limiting and Excess Reactants Learning Objectives Define the terms “limiting reactant” and “excess reactant.” Identify the limiting reactant and Which reactant is limiting, assuming we started with grams of ammonium nitrate and grams of sodium phosphate. c. How many moles of NH<sub>3</sub> can be produced from the reaction of g of N<sub>2</sub>? How many moles of NH<sub>3</sub> can be produced from the reaction of g of H<sub>2</sub>? If g of N<sub>2</sub> and g of H<sub>2</sub> are combined, which is the limiting reagent? How many grams of NO are formed? How much of the excess reactant remains after the reaction? If g of ethylene (C<sub>2</sub>H<sub>4</sub>) are combusted, what is the mass of each product that can be formed? b. Oxygen is the limiting reagent. If the sample used in (b) is not enough water (limiting reactant) and too much carbon tetrahydride (excess reactant). What is the limiting reagent, and what is the reactant in excess? b. Calculate the mass of FeS formed. Acrylonitrile C. Find the mass of excess reactant left over at the conclusion of the reaction. An unbalanced chemical equation is given as:  $2Na(s) + O_2(g) \rightarrow Na_2O(s)$  If you have g of sodium and g of oxygen. A. Find the number of moles of sodium oxide produced. The limiting reactant is CH<sub>4</sub> since it would yield the least amount of product (g CO<sub>2</sub>). See answer (b) What mass of pure CaC<sub>2</sub> must be added to excess water to produce g C<sub>2</sub>H<sub>2</sub>? Can make a LOT more hydrogen with the carbon tetrahydride, so the carbon tetrahydride is in excess and the water is limiting. B. Find the mass of excess reactant left over at the conclusion of the reaction. Practice Problems: Limiting Reagents Take the reaction:  $NH_3 + HNO_3 \rightarrow NH_4NO_3 + H_2O$ . In an experiment, g of NH<sub>3</sub> are allowed to react with g of HNO<sub>3</sub>. Which reactant is the limiting reagent? What mass of the excess reactant(s) is left over? You make L Hydrogen NaCl + Pb(NO<sub>3</sub>)<sub>2</sub>  $\rightarrow$  NaNO<sub>3</sub> + PbCl<sub>2</sub> limiting reactant) How much excess reactant (from question 3) will be left when the reaction is complete? Many cooks follow a recipe when making Practice Problems: Limiting Reagents Take the reaction:  $NH_3 + HNO_3 \rightarrow NH_4NO_3 + H_2O$ . In an experiment, g of NH<sub>3</sub> are allowed to react with g of HNO<sub>3</sub>. Which reactant Identify the limiting reactant(s) and excess reactant(s). g CH<sub>4</sub> is = mol stoich, comes from mol CaC<sub>2</sub> mass of CaC<sub>2</sub>  $\times$  = g pure CaC<sub>2</sub> (c) Calcium carbide is commonly less than % pure. How is the amount of product in a reaction affected by an insufficient quantity of any of the reactants? Solution path) Calculate moles: sucrose  $\Rightarrow$  mol oxygen  $\Rightarrow$  mol) Divide by coefficients of balanced equation LIMITING REAGENT Practice Problems At high temperatures, sulfur combines with iron to form the brown-black iron (II) sulfide:  $Fe(s) + S(l) \rightarrow FeS(s)$  In one experiment, g of Fe are allowed to react with g of S. a. 2) Consider the following reaction:  $CaCO_3 + FePO_4 \rightarrow Ca_3(PO_4)_2 + Fe_2(CO_3)_3$  3 (a) Write a balanced equation for this reaction. In the first case, you need to do one or the other LIMITING REAGENT Practice Problems At high temperatures, sulfur combines with iron to form the brown-black iron (II) sulfide:  $Fe(s) + S(l) \rightarrow FeS(s)$  In one experiment, g of limiting reactant that is available for a chemical reaction determines the amount of product that is formed and the amount of excess reactant that is left over.