**Name: Period: Seat#:**

**Worksheet #1**

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| 1. What does the term limiting reagent mean? | 1. What does the term excess reagent mean? |
| 1. How can you tell if a practice problem is a “regular” stoichiometry problem, or a “limiting” stoichiometry problem? | |
| 1. What are the numbered “steps” for performing a limiting reagent problem? | 1. Explain which unit is “key” to identifying limiting reagents. What is wrong with just using grams? Give a thoughtful and detailed explanation. |
| 1. Using the equation and diagram below, identify what the limiting reagent would be.   Mg + O 🡪 MgO | 1. Using the equation and diagram below, identify what the limiting reagent would be.   2Na + S 🡪 Na2S |
| 1. Explain what is wrong with the following student answer on a quiz question:   *Question: Using the information below, identify what the limiting reagent is for the reaction.  2H2 + O2 🡪 2H2O You have 15 g of H2, and 10 g of O2.*  *There is a 2:1 ratio of H2 to O2 needed to perform the reaction. You only have a* 1**.**5 : 1 *ratio of H2 to O2, so therefore you do not have enough H2, so it is limiting. You would have needed 20 grams of H2 to finish the reaction.* | |
| 1. Identify the limiting reagent: You react 4 moles of CH4 with 2.5 moles of O2 in a combustion reaction.   CH4 + 2O2  🡪 CO2 + 2H2O | |
| 1. If you react 3 moles of sodium, with 40 grams of chlorine gas to make sodium chloride,   which chemical is the limiting reagent? | |
| 1. Identify the limiting reagent: you react 46 grams of sodium with 32 grams of oxygen gas to make sodium oxide.    4Na + O2 🡪 2Na2O | |
| 1. If you react 3.5 x 1025 molecules of magnesium oxide with 7.8 x 1024 molecules of lithium hydroxide,  which is the limiting reagent? | |
| 1. If you react 453 g of iron with 134 g of oxygen gas to form iron (III) oxide, which is the limiting reagent? | |
| 1. Will you have enough calcium phosphate to completely react with 75.6 grams of aluminum sulfate if you start with 2.6 moles of calcium phosphate? Show how you justify your answer.   \_\_\_Ca3(PO4)2 + \_\_\_\_ Al2(SO4)3 🡪 | |
| 1. You react 23 grams of zinc with 25 grams of hydrochloric acid in a single replacement reaction. What is the excess reagent? | |