LIMITING REACTANTS NOTES

*BeAR TIME 1-29*

Limiting Reactant: the reactant that limits the amount of product that can be produced.  This is the reactant that causes the reaction to stop

STEPS

1. Write and balance the equation.
2. Label what you are given in the problem and what you are looking for.
3. Solve for moles. The moles that you have just solved for is called your "HAVE"
4. Do a molar relationship between your two givens. This is called your "NEED"
5. Compare your HAVE to your NEED to figure out what is your LR and which reactant is in excess.
6. Do all calculations with the original moles of your LR.
7. It is possible to have exactly enough of both of your givens so that neither is in excess or limiting. To do your calculations you can then use either of the givens.
8. Now you can calculate your excess reactant.

Question 1

**40 g sodium hydroxide reacts with 60 g of sulfuric acid. (hint: this is an acid base reaction and your products are a salt and water)**

1. Which reactant is the LR?
2. Which reactant is in excess and by how many grams.
3. Calculate the mass of sodium sulfate that will be formed.

Question 2

**When 1.00 g of zinc metal is placed in 25 ml. of a 0.250 M lead (Il) nitrate**

**solution, crystals of lead form on the corroding zinc. (Hint: this is a single**

**replacement reaction.)**

1. Which reactant is the LR?
2. Which reactant is in excess and by how many moles?
3. How many grams of lead can be theoretically formed?

Question 3

 **If 7.56 g of iron metal are placed in 100 ml, of a 1.00 M solution of hydrochloric acid, hydrogen gas and iron (Il) chloride are produced.**

1. Which reactant is the LR?
2. Which reactant is in excess and by how many grams?
3. Calculate the number of grams of each product produced.