

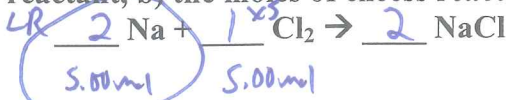
4) How could you recognize a problem as a limiting reactant problem?

1 pt

amounts given for two (both) reactants

5) 5.00 moles of Sodium react with 5.00 moles of Chlorine to form Sodium Chloride. Find a) the limiting reactant, b) the moles of excess reactant, and c) the moles of product.

Spts



$$\frac{5.00 \text{ mol Na}}{2 \text{ mol Na}} \times \frac{2 \text{ mol NaCl}}{2 \text{ mol Na}} = 5.00 \text{ mol NaCl}$$

$$\frac{5.00 \text{ mol Cl}_2}{1 \text{ mol Cl}_2} \times \frac{2 \text{ mol NaCl}}{2 \text{ mol Cl}_2} = 10.0 \text{ mol NaCl}$$

$$\frac{5.00 \text{ mol Na}}{2 \text{ mol Na}} \times \frac{1 \text{ mol Cl}_2}{1 \text{ mol Cl}_2} = 2.50 \text{ mol Cl}_2$$

Have 5.00
Need

a) Na
b) 2.50 mol Cl₂

2.50 mol Cl₂ excess

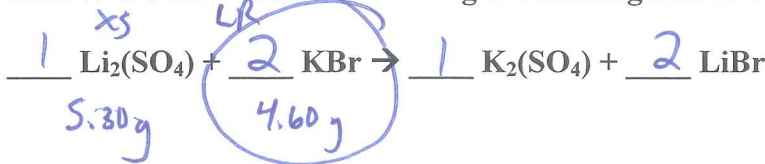
c) 5.00 mol NaCl

6) Consider the following reaction:

Suppose a solution containing 5.30g of Lithium Sulfate is mixed with a solution containing 4.60g Potassium Bromide.

Spts

SHOW YOUR WORK for finding the limiting reactant.



op in B

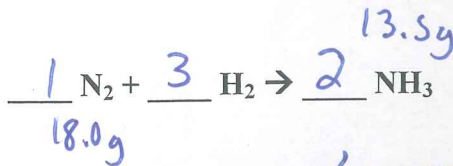
$$\frac{5.30 \text{ g Li}_2\text{SO}_4}{109.94 \text{ g Li}_2\text{SO}_4} \times \frac{1 \text{ mol Li}_2\text{SO}_4}{1 \text{ mol Li}_2\text{SO}_4} \times \frac{2 \text{ mol KBr}}{1 \text{ mol Li}_2\text{SO}_4} \times \frac{119.00 \text{ g KBr}}{1 \text{ mol KBr}} = \frac{\text{Need}}{11.5 \text{ g KBr}}$$

LR is KBr

7) 18.0g of Nitrogen reacts with excess Hydrogen to form 13.5g Ammonia. Find the percent yield.

$$\% \text{ yield} = \frac{\text{actual}}{\text{theoretical}} \times 100 = \frac{13.5}{21.9} \times 100 = \boxed{61.6\%}$$

Spts



$$\frac{18.0 \text{ g N}_2}{28.02 \text{ g N}_2} \times \frac{1 \text{ mol N}_2}{1 \text{ mol N}_2} \times \frac{2 \text{ mol NH}_3}{1 \text{ mol N}_2} \times \frac{17.04 \text{ g NH}_3}{1 \text{ mol NH}_3} = 21.9 \text{ g NH}_3$$

BONUS

42 pts

NIVJA