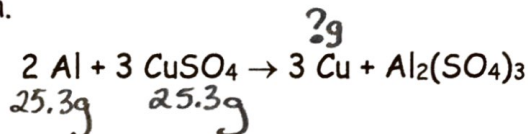


# REAL STOICHIOMETRY QUIZ REVIEW

PERFORM THE FOLLOWING LIMITING REACTANT PROBLEMS:

1. If 25.3 g of aluminum reacts with 25.3 g of copper(II) sulfate, how many grams of copper are formed? Identify the limiting and excess reactants in this single replacement reaction.



$$\textcircled{1} \frac{25.3\text{g Al} \mid 1\text{mol Al} \mid 3\text{mol Cu} \mid 63.55\text{g Cu}}{26.98\text{g Al} \mid 2\text{mol Al} \mid 1\text{mol Cu}} = 89.4\text{g Cu}$$

$\text{CuSO}_4$  is the limiting reactant  
 $\text{Al}$  is the excess

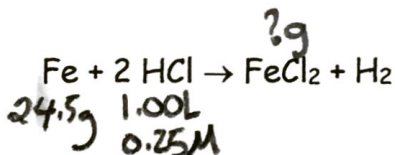
$$\textcircled{2} \frac{25.3\text{g CuSO}_4 \mid 1\text{mol CuSO}_4 \mid 3\text{mol Cu} \mid 63.55\text{g Cu}}{159.61\text{g CuSO}_4 \mid 3\text{mol CuSO}_4 \mid 1\text{mol Cu}} = 10.1\text{g Cu}$$

Theoretical yield = 10.1g Cu

- a) What is the limiting reactant in the reaction? The reactant in excess?

$\text{CuSO}_4$  is LR,  $\text{Al}$  is in excess

2. If 24.5 g of iron are placed in 1.00 L of 0.25M HCl, how many grams of  $\text{FeCl}_2$  are obtained? Identify the limiting and excess reactants in this single replacement reaction.



$$\textcircled{1} \frac{24.5\text{g Fe} \mid 1\text{mol Fe} \mid 2\text{mol FeCl}_2 \mid 126.75\text{g FeCl}_2}{55.85\text{g Fe} \mid 1\text{mol Fe} \mid 1\text{mol FeCl}_2} = 55.6\text{g FeCl}_2$$

$$\textcircled{2} \frac{1.00\text{L HCl} \mid 0.25\text{mol HCl} \mid 1\text{mol FeCl}_2 \mid 126.75\text{g FeCl}_2}{1\text{L HCl} \mid 2\text{mol HCl} \mid 1\text{mol FeCl}_2} = 15.8\text{g FeCl}_2$$

Theoretical yield = 15.8g FeCl<sub>2</sub>

- What is the limiting reactant in the reaction? The reactant in excess?

$\text{HCl}$  is LR,  $\text{Fe}$  is in excess

