

SHOW ALL WORK

1. Given the reaction,



to produce 0.600 moles of $\text{H}_2\text{O}_{(l)}$:

- a.) how many moles of $\text{H}_{2(g)}$ are needed?

0.600 mole H_2 needed

- b.) how many liters of $\text{O}_{2(g)}$ are needed?

0.300 mole O_2 needed $\xrightarrow{\times 22.4}$ 6.72 L O_2

2. For the reaction,



how many moles of SO_3 liquid will be formed reacting with 2.1973×10^{20} molecules of $\text{O}_{2(g)}$?

3.65×10^{-4} mole O_2 $\xrightarrow{\times 2}$ 7.3×10^{-4} mole SO_3

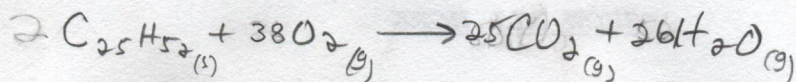
3. If the following reaction occurs,



188g
how many grams of barium chloride will be needed to react with 188 grams of aluminum sulfate?

0.549 mole $\times 3 = 1.65 \text{ mole BaCl}_2 \text{ needed} \Rightarrow$ 343 g BaCl_2

4. If 78.0 liters of oxygen are consumed when a candle made from paraffin ($C_{25}H_{52}$) is burned, what volume of carbon dioxide is produced? (Water is the other product.)

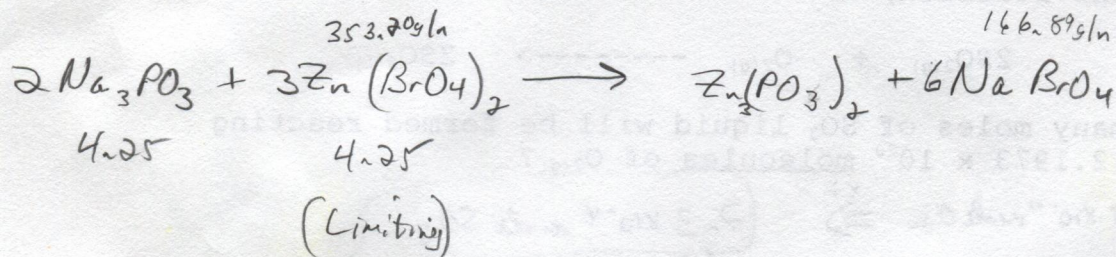


$$78.0 L \rightarrow$$

$$51.3 L CO_2$$

$$\frac{78.0 L O_2}{38 CO_2} = \frac{78.0 L O_2}{x CO_2}$$

5. When 4.25 moles of sodium phosphite reacts with 4.25 moles of zinc perbromate in a double replacement reaction, how many moles of sodium perbromate are produced?



$$4.25 \text{ mol} \left(\frac{6}{3} \right) =$$

$$8.5 \text{ moles}$$