

Nothing But Percent Yield Problems

Name _____

HINT:

1. If your theoretical yield of water was 45.8 moles but only 36.1 moles formed, what is your percent yield?

$$\% \text{ yield} = \frac{\text{actual yield}}{\text{theoretical yield}} \times 100$$

Aluminum	1.97 million
Arsenic	79,200
Lead	64,000
Manganese	14.5 million
Mercury	2,820

HINT:

5. If 803 moles of oxygen gas react, how many moles of water should form, in a perfect world?

$$803 \text{ moles } O_2 \times \left(\frac{? \text{ moles } H_2O}{? \text{ moles } O_2} \right) = ? \text{ moles } H_2O$$

6. If 38.9 grams of hydrogen react, what is your theoretical yield, in grams, of water?

$$38.9 \text{ g } H_2 \times \left(\frac{\text{mol } H_2}{\text{g } H_2} \right) \times \left(\frac{\text{mol } H_2O}{\text{mol } H_2} \right) \times \left(\frac{\text{g } H_2O}{\text{mol } H_2O} \right) =$$

7. If 5.30 moles of oxygen react, what is your theoretical yield, in moles, of water?

3

HINT

Nothing but Limiting Reagent problems

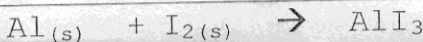
For each of the following unbalanced chemical equations, suppose 10.0 grams of each reactant is used. Show by calculation which reactant is limiting. Remember to balance the reaction first.

strategy: try to solve BOTH REACTANTS, CHOOSE SMALLER RESULT. THAT'S YOUR LIMITING REACTANT

$$CO(g) + 2H_2(g) \rightarrow CH_3OH(L)$$

#1 $10.0 \text{ g } CO \times \left(\frac{1 \text{ mol } CO}{28 \text{ g } CO} \right) \times \left(\frac{1 \text{ mol } CH_3OH}{1 \text{ mol } CO} \right) =$ g CH_3OH

#2 $10.0 \text{ g } H_2 \times \left(\frac{1 \text{ mol } H_2}{2.02 \text{ g } H_2} \right) \times \left(\frac{1 \text{ mol } CH_3OH}{2 \text{ mol } H_2} \right) =$ g CH_3OH



and lakes with arsenic contamination now. failure of a waste pond at a Tennessee Valley Authority power they didn't," said Eric Schaeffer, a river miles are tainted by s and longer- In southeastern Ohio, tainted former EPA enforcement official, mine water draining from abandoned