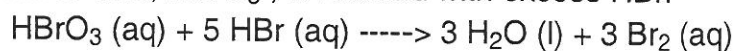


Name: Key
Blk: _____ Date: _____

Chemistry 11
STOICHIOMETRY
PERCENT YIELD WORKSHEET

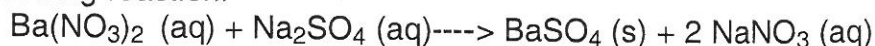
1. 20.0 grams of Bromic acid, HBrO_3 , is reacted with excess HBr:



- a. What is the THEORETICAL YIELD of Br_2 for this reaction?
b. If 47.3 g of Br_2 is produced, what is the PERCENTAGE YIELD of Br_2 ?

a) 74.4 g Br_2
b) 63.6% Br_2

2. For the following reaction:

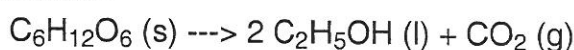


When 35.0 g of $\text{Ba}(\text{NO}_3)_2$ is reacted with excess Na_2SO_4 , 29.8 g of BaSO_4 is recovered by the chemist.

- a. Calculate the THEORETICAL YIELD of BaSO_4 .
b. Calculate the PERCENT YIELD of BaSO_4 .

a) 31.3 g BaSO_4
b) 95.2% BaSO_4

3. Yeast can act on sugar, such as glucose, $\text{C}_6\text{H}_{12}\text{O}_6$, to produce ethyl alcohol, $\text{C}_2\text{H}_5\text{OH}$, and Carbon dioxide.



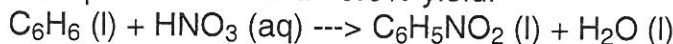
If 223 g of ethyl alcohol are recovered after 1.63 kg of glucose react, what is the PERCENTAGE YIELD of ethyl alcohol?

26.8% ethyl alcohol

4. Solid Calcium carbonate decomposes into solid Calcium oxide and Carbon dioxide gas. Under certain circumstances this reaction proceeds with a 92.4% yield of Calcium oxide. How many grams of Calcium oxide can the chemist actually obtain if 12.4 g of Calcium carbonate is heated?



5. The following reaction proceeds with a 70.0% yield.

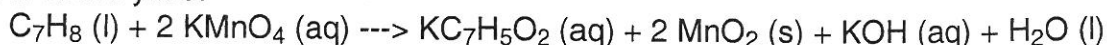


Calculate the mass of $\text{C}_6\text{H}_5\text{NO}_2$ actually obtained if 12.8 g of C_6H_6 reacts with excess HNO_3 .

14 g $\text{C}_6\text{H}_5\text{NO}_2$

6.42 g CaO

6. The reaction of toluene, C_7H_8 , with Potassium permanganate, KMnO_4 , gives less than a 100% yield.



- a. 8.60 g of C_7H_8 is reacted with excess KMnO_4 . What is the THEORETICAL YIELD, in grams, of $\text{KC}_7\text{H}_5\text{O}_2$?
b. If the Percent Yield is 70.0%, what mass of $\text{KC}_7\text{H}_5\text{O}_2$ can be actually obtained?
c. What mass of C_7H_8 is needed to produce 13.4 g of $\text{KC}_7\text{H}_5\text{O}_2$ assuming a yield of 60.0%?

a) 15.0 g $\text{KC}_7\text{H}_5\text{O}_2$

b) 10.5 g $\text{KC}_7\text{H}_5\text{O}_2$

c) 12.8 g C_7H_8