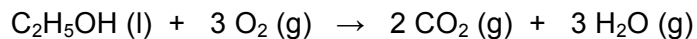


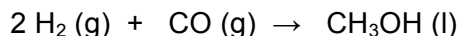
Stoichiometry Worksheet #3

1. Ethyl alcohol, C_2H_5OH , burns with a pale blue flame. The products of this combustion are CO_2 and water vapour as indicated by the balanced equation below



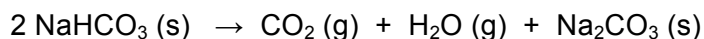
A combustion reaction produced 65.0 g $H_2O (g)$. What mass of ethyl alcohol was used?
answer: 55.37 g

2. Methanol, CH_3OH , can be manufactured by combination of gaseous hydrogen and carbon monoxide, as indicated by the equation below



What mass of $CO (g)$ is required to react with 85.0 g $H_2 (g)$? answer: 589 g

3. Sodium bicarbonate, $NaHCO_3$, also known as baking soda, decomposes according to the balanced equation below



A technician decomposes 6.50 g $NaHCO_3$ at a high temperature and obtains 3.88 g Na_2CO_3 . Calculate the percent yield for his activity. Answer: 95%

4. Nitrogen gas, N_2 , can be prepared by the following reaction



a) Suppose 20.0 g NH_3 reacts. How many Cu atoms will be produced?

Answer: 1.06×10^{24} Cu atoms

b) Suppose 20.0 g NH_3 reacts. How many N_2 molecules will be produced?

Answer: 3.53×10^{23} N_2 molecules

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5. If the percent yield of the reaction below is 98.5%, then what mass of N_2H_4 is needed to produce 49.0 grams of NO_2 ? Answer: 17.3 g

