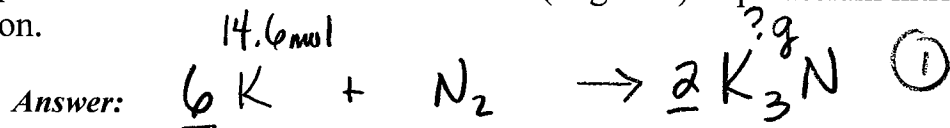


STOICHIOMETRY - LECTURE NOTES

Homework Answers (solutions to the homework) (the 2's) - Craig

EXAMPLE #3:

A synthesis reaction is performed in the lab where 14.6 moles of potassium react with nitrogen gas to form potassium nitride. Calculate the mass (in grams) of potassium nitride that was created in this reaction.

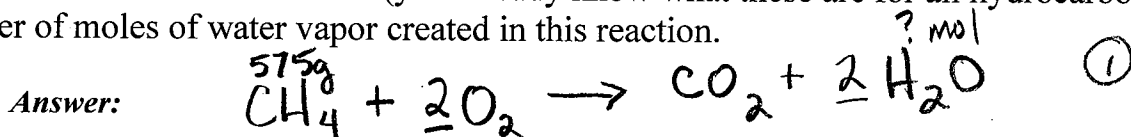


$$\frac{14.6 \text{ mol K} \quad | \quad 2 \text{ mol K}_3\text{N} \quad | \quad 3(39.1 \text{ g}) + 14.01 \text{ g}}{\underline{\quad} \quad | \quad \underline{6 \text{ mol K}} \quad | \quad \underline{1 \text{ mol K}_3\text{N}}} = \boxed{639 \text{ g K}_3\text{N}}$$

$\textcircled{2}$
 $\textcircled{3}$
 $\textcircled{4}$

EXAMPLE #4:

When 575 grams of methane, CH₄, reacts with oxygen gas in a combustion reaction the products of a combustion reaction are formed (you already know what these are for all hydrocarbons). Calculate the number of moles of water vapor created in this reaction.



$$\frac{575 \text{ g CH}_4 \quad | \quad 1 \text{ mol CH}_4 \quad | \quad 2 \text{ mol H}_2\text{O}}{\underline{\quad} \quad | \quad \underline{12.01 \text{ g} + 4(1.008 \text{ g})} \quad | \quad \underline{1 \text{ mol CH}_4}} = \boxed{71.7 \text{ mol H}_2\text{O}}$$

HOMEWORK PROBLEMS :

2a.) How many grams of Potassium Chlorate, KClO_{3(s)}, must decompose to produce potassium chloride, KCl_(s) and 1.45 moles of oxygen gas?

