

Mass Yields - Problem Set #1 - Questions

Major Steps in Determining Molar Yields:

- 1) Balance the Equation in Moles.
- 2) Write out the **Weight, W**, of all species where this data is given.
- 3) Convert any required units.
- 4) Calculate the **Molecular Weight, MW**, of the relevant compounds.
- 5) Write out the Equation relating **MW, n, & W**.
- 6) Write out the **Number of Moles, n**, of all species where this data is given.
- 7) Calculate the required **Number of Moles, n**, for the species in question.
- 8) Determine the **Weight, W**, of the species in question using its **Molecular Weight, MW**.

$MW = W / n$	$W = MW \times n$	$n = W / MW$
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Note #1: Show all work for all questions.

Note #2: Use the number of significant figures in your final answer that is justified by the number of significant figures of the data you were given.

Determine the number of grams of the indicated products and/or starting materials as requested:

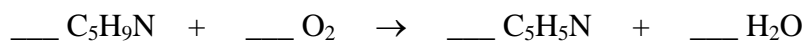
1. The combustion of 1.2 grams of C_4H_8 produces how many grams of water.

2. When 0.024 grams of HF are reacted as follows, how many grams of $C_2H_4F_2$ are produced?



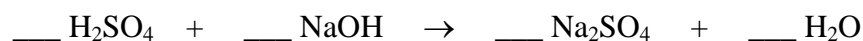
3. If a person burns 0.24 kilograms of C_9H_{20} , how many grams of CO_2 will be produced?

4. When the following reaction consumes 234 grams of oxygen, how many kilograms of C_5H_5N are produced?



5. How many tonnes of Oxygen does it take to burn 1.6 kilograms of C_2H_4 ?

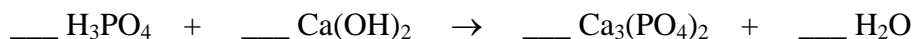
6. How many kilograms of NaOH are consumed in the following reaction to produce 0.22 tonnes of Na_2SO_4 ?



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7. How many grams of C_6H_6 have to be burned to produce 6.06 grams of CO_2 .

8. If one wants to produce 17 kilograms of $Ca_3(PO_4)_2$, how many kilograms of H_3PO_4 should one use?



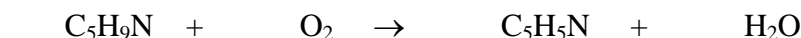
9. The burning of 1.2 grams of C_4H_8 produces how many grams of CO_2 .

10. When 0.024 grams of HF are reacted as follows, how many grams of $C_6H_9F_3$ are produced?



11. If a person combusts 0.24 grams of C_9H_{20} , how many grams of water will be produced?

12. For the following reaction, how many grams of C_5H_9N must be consumed to produce 2.2 grams of water?



13. How many kilograms of C_2H_4 does it take to consume 1.5 kilograms of oxygen in a combustion reaction?

14. How many grams of BH_3 are consumed in the following reaction to produce 12 grams of SiH_4 ?



15. How many grams of C_6H_6 have to be burned to produce 6.00 grams of water?

16. If this reaction produces 6.0 grams of $Ca_3(PO_4)_2$, how many grams of water would be produced?

