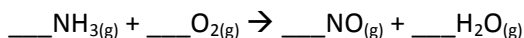


Stoichiometry – Additional Review Problems

- How many moles of O atoms are in two moles of $\text{Fe}_2(\text{C}_2\text{O}_4)_3$?
- Which of the following statements is false about 1.00 mole of O_2 ?
 - It contains 16.0 g of O atoms.
 - It contains 1.204×10^{24} atoms of O.
 - It contains 6.022×10^{23} molecules of O_2 .
 - It contains two moles of O atoms.
 - It has a mass of 32.0 g.
- What mass of calcium contains the same number of atoms as 54.8 kg of carbon?
- Find the mass (in grams) of the following:
 - 0.50 mol of K
 - 3.22×10^{21} atoms of Br
 - 15.2 moles of N_2O
 - 7.20×10^{24} formula units of K_2O
- Find the number of moles in the following:
 - 765 g of Al
 - 4.42×10^{18} atoms of B
 - 4.75×10^{23} molecules of SO_2
- The molar mass of a compound with the empirical formula of CH_2 is approximately 56 g. What is its molecular formula?
- How many moles of each atom are present in 38.0 g of $\text{Ba}(\text{ClO}_3)_2$?
- What mass of sulfur is present in 782 g of $\text{K}_2\text{S}_2\text{O}_3$?
- A 5.67 g quantity of chlorine reacts with 8.94 g of oxygen to form a compound. What is its empirical formula?
- A compound is 53.3% C, 11.1% H and 35.6% O. Its molar mass is approximately 90 g/mol. What is its molecular formula?

11. Given the following unbalanced reaction equation:



Balance the equation and determine what mass of H_2O is produced from a mixture of 100. g of NH_3 and 200. g of O_2 .

12. Solid potassium superoxide (KO_2) is used in space vehicles to remove carbon dioxide gas and to regenerate oxygen gas. In the reaction, KO_2 reacts with carbon dioxide to produce solid potassium carbonate and oxygen gas. Write the balanced equation and determine what mass of oxygen is produced from 83.0 g of CO_2 .

13. Solid zinc sulfide reacts with oxygen to form solid zinc oxide and gaseous sulfur dioxide. Write the balanced equation and determine what mass of SO_2 is produced from a mixture of 85.0 g of zinc sulfide and 60.0 g of oxygen.

If 50.0 g of SO_2 are produced performing this reaction in the lab, what is the percent yield of the reaction?