

CH.3 Stoichiometry

What is a Mole?

What is Avogadro's Number?

How many moles are in 24g of magnesium?

How many atoms are in 2.50 mol of calcium chloride?

How many sulfuric acid molecules are in 5.25 g of H_2SO_4 ?

How many oxygen atoms are in 6.75 g of $\text{Ca}(\text{NO}_3)_2$?

How many formula units of calcium chloride (CaCl_2) are present in 15.0 grams of CaCl_2 ?
(Molar mass of $\text{CaCl}_2 = 110.98 \text{ g/mol}$)

Silver and nitric acid react according to the following balanced equation:



A. How many moles of silver are needed to react with 40 moles of nitric acid?

B. From the amount of nitric acid given in Part A, how many moles of silver nitrate will be produced?

C. From the amount of nitric acid given in Part A, how many moles of water will be produced?

D. From the amount of nitric acid given in Part A, how many moles of nitrogen monoxide will be made?

What is an Empirical Formula?

List 3 steps to determine an empirical formula from the percent composition

1.)

2.)

3.)

Determine the empirical formula of a compound that is 52.14% carbon, 13.13% hydrogen, and 34.73% oxygen.

What's the empirical formula of a compound that contains 49.4% K, 20.3% S, and 30.3% O by mass?

A compound has an empirical formula of CH and a **molar mass** of 78 g/mol.
What is its molecular formula?

Define a limiting reactant:

What is the limiting reactant when 5.00 moles of nitrogen gas (N_2) react with 12.00 moles of hydrogen gas (H_2) to form ammonia (NH_3)?

Write the Percent Yield formula:

During the synthesis of aspirin, the theoretical yield is calculated to be 15.8 grams. If the actual amount of aspirin obtained is 12.3 grams, what is the percent yield of the reaction?

