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STOICHIOMETRY

Vocabulary Review

Match the correct vocabulary term to each numbered statement. Write the letter of the correct term on the line.

Column A

- d 1. the starting materials in a chemical reaction
- h 2. a conversion factor derived from the coefficients of a balanced chemical equation interpreted in terms of moles
- f 3. the maximum amount of product that could be formed in a reaction
- a 4. the amount of a substance that contains 6.02×10^{23} representative particles of that substance
- g 5. the substance completely used up in a chemical reaction
- j 6. the ratio of how much product is produced compared to how much is expected, expressed as a percentage
- b 7. the calculations of quantities in a chemical reaction
- i 8. the actual amount of product in a chemical reaction
- e 9. the substance left over after a reaction takes place
- c 10. a stoichiometric computation in which the mass of products is determined from the given mass of reactants

Column B

- a. mole
- b. stoichiometry
- c. mass-mass calculation
- d. reactants
- e. excess reagent
- f. theoretical yield
- g. limiting reagent
- h. mole ratio
- i. actual yield
- j. percent yield

Chapter Quiz

Fill in the word(s) that will make each statement true.

1. The 1 in a balanced chemical equation also reveal the mole ratios of the substances involved. 1. coefficients
2. The number of moles of a product can be calculated from a given number of moles of 2. 2. limiting reactant 12.1
3. In mass-mass calculations, the molar mass is used to convert mass to 3. 3. moles 12.2
4. In addition to mass, the only quantity conserved in every chemical reaction is 4. 4. energy, moles, atoms 12.2
5. According to the equation:

$$2\text{NO}(g) + \text{O}_2(g) \rightarrow 2\text{NO}_2(g)$$
 22.4 L of O_2 will react with 5 L of NO at STP. 5. 44.8L 12.2

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- NT 6. The excess reagent determines the amount of product formed in a reaction. 12.3
- NT 7. In the reaction $2\text{CO}(g) + \text{O}_2(g) \rightarrow 2\text{CO}_2(g)$, using 4 moles of CO to react with 1 mole of O_2 will result in the production of 4 moles of CO_2 . 12.3
- NT 8. To calculate the percent yield of a reaction, you use the following relationship:

$$\frac{\text{theoretical yield}}{\text{actual yield}} \times 100$$
12.3
- NT 9. The total mass of the excess reagent and the limiting reagent is equal to the total mass of the products. 12.3
- ST 10. The actual yield is equal to the theoretical yield. 12.3

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