Name:

**Unit 5 Practice Guide**

Define the following terms:

1. Moles
2. Mole Ratio
3. Limiting Reactant
4. Excess Reactant
5. Percentage Yield
6. Molar Mass
7. Coefficient
8. Subscript

Short Answer

1. Describe a chemical equation is balanced.
2. What amount of hydrochloric acid, HCl is found in 5.5 grams?
3. Compare how the term mole relates to the term dozen.
4. When calculating the amount of product produced in a chemical reaction, would it be better base your calculation on the amount of limiting reactant or on the amount of excess reactant? Justify your answer.
5. Explain the similarities and difference between limiting and excess reactants, how it is useful to be aware of each in a reaction, and how examples of these are found every day.

Determine the molar mass of the following compounds:

1. CuCl2
2. NaNO3
3. Cu(NO3)2
4. NaCl
5. CoF2

Calculations

1. What is the molecular formula for the compound with a formula mass of 87.18 amu and contains C and H?
2. How many moles of compound are there in 150.0 g of potassium dichromate, K2Cr2O7?
3. Suppose you are going to make sandwiches that contain specifically 2 slices of bread and 1 slice of ham. If you have a total of 23 slices of ham and 50 slices of bread, how many sandwiches can you make?

Consider the following reaction: **CaCN2 + 3H2O 🡪 CaCO3 + 2NH3**

1. *grams of CaCN2 and an excess of water produces 27.1 grams of NH3 after the reaction.*
2. Identify the excess reactant.
3. Identify the limiting reactant.
4. Determine the molar mass of the limiting reactant.
5. What is the amount of moles in the given mass of the limiting reactant?
6. Determine the mole ratio of the limiting reactant to the product.
7. Using the moles of the reactant, determine the moles of the product.
8. Determine the molar mass of the considered product.
9. What is the mass that theoretically will be produced of the product?
10. What is the percent yield of the reaction?
11. Is the percent yield determined reasonable? Explain if this is a quality value of a percent yield. Support your answer.

Extra:

1. What is the percentage of oxygen in NaNO3?
2. When can the term molecular mass be used instead of formula mass?