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**Using Percent Composition**

1. You have a 236.10 g sample of sodium nitride what is the mass of sodium in the sample? (Hint find % composition of sodium first.)
2. There is a 769.28 g sample of barium phosphate what is the mass of

HINT: Write chemical formula for Barium Phosphate, and then find % composition of element

* 1. Barium in the sample
  2. Phosphorous in the sample

**Empirical Formula**

1. What’s the empirical formula of a molecule containing 65.5% carbon, 5.5% hydrogen, and 29.0% oxygen?
2. The compound benzamide has the following percent composition. What is the empirical formula?

C = 69.40 % H= 5.825 % O = 13.21 % N= 11.57 %

1. What is the empirical serine if it’s percent composition is 34.95 % C, 6.844 % H, 46.56 % O and 13.59 % N?
2. A 50.51 g sample of a compound made from phosphorus and chlorine is decomposed. Analysis of the products showed that 11.39 g of phosphorus atoms and 39.12 g of chlorine atoms were produced. What is the empirical formula of the compound?

**Molecular Formula and Empirical formula**

1. A compound with an empirical formula of C2OH4 and a molar mass of 88 grams per mole.
2. A compound with an empirical formula of C4H4O and a molar mass of 136 grams per mole.
3. A compound with an empirical formula of CFBrO and a molar mass of 254.7 grams per mole.
4. A compound whose percent composition by mass is 85.7% carbon and 14.3% hydrogen
   1. What is the empirical formula of the compound?
   2. If the compound has a molar mass of 56 g/mol, what is the molecular formula?
5. A compound contains 64.3% carbon, 7.14% hydrogen and 28.6% oxygen. The molecular formula has a molecular mass of 448 g/mol.
   1. What is the empirical formula for this compound?
   2. What is the molecular formula for this compound?