

Empirical & Molecular Formula Quiz

Name _____

1. The empirical formula for the chemical CClNO has a molecular mass of 232.42u. What is the molecular formula of this chemical?
2. What is the empirical formula of a compound that is 40% sulfur and 60% oxygen by weight?
3. 0.940g of a compound consisting of only magnesium and oxygen contains 0.564 grams of Mg. What is the compound's empirical formula?
4. What is the empirical formula of a compound formed by the reaction of 102.6 grams of Ca and 97.4 grams of F?
5. What is the molecular formula of $\text{C}_5\text{H}_7\text{N}$ if its gram molecular mass is 162 grams?
6. The density of acetylene (CH) at STP is 1.17 g/L. What is the molar mass of acetylene? What is its molecular formula?

7. Find the empirical formula of a zinc-chlorine compound using the following lab data:

| | |
|------------------------------------|---------|
| Mass of evaporating dish..... | 42.73 g |
| Starting mass of zinc..... | 5.87 g |
| Mass of dish and residue..... | 54.99 g |
| Mass of zinc-chlorine residue..... | g |

Calculate the empirical formula of the compound formed: