**NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PERIOD\_\_\_\_\_\_\_\_\_\_**

**Emp Formula, Molec Form, % Comp Practice**

1. Calculate the formula mass of acetic acid, CH3COOH.

2. What is the formula mass of 3-aminophthalhydrazide (Luminol®), C8H7O2N3 ?

3. Find the formula mass of cobalt(II) sulfate heptahydrate.

4. Calculate the formula mass of manganese(II) chloride tetrahydrate.

5. Ethylene glycol is a major ingredient in many antifreeze formulas, such as Prestone® and Zerex®. Its formula is HOCH2CH2OH. What is its formula mass?

6. Calculate the percent composition of methyl ethyl ketone, CH3COCH2CH3.

7. What is the percent composition of anhydrous aluminum nitrate?

8. Nicotine is the primary active ingredient in various forms of tobacco products. Its formula is C10H14N2. What is its percent composition?

9. Sodium lauryl sulfate is the *major* detergent in many shampoos. Its formula is CH3(CH2)11OSO3Na. What is its percent composition?

10. Tetrachloroethane is a valuable nonflammable solvent. Its percent composition is 14.31% carbon, 1.20% hydrogen, and 84.49% chlorine. What is the empirical formula of this compound?

11. Butyric acid is an odd compound – it smells like “baby spit-up,” but it can be reacted with ethyl alcohol to make artificial pineapple fragrance (ethyl butyrate). Butyric acid’s percent composition is 54.53% carbon, 9.15% hydrogen, and 36.32% oxygen. Calculate its empirical formula.

12. Lest you think all compounds have *some* redeeming feature – methylguanidine is a poisonous substance first isolated from decomposing horsemeat in 1888. Its percent composition is 32.86% carbon, 9.65% hydrogen, and 57.48% nitrogen. Find its empirical formula.

13. Cyclohexane is 85.63% carbon and 14.37% hydrogen and has a formula mass of 84.16 g/mol. What is its molecular formula?

14. Adenine is a component of DNA and RNA. Its composition is 44.44% carbon, 3.73% hydrogen, and 51.83% nitrogen; its formula mass is 135.13 g/mol. What is its molecular formula?