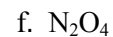
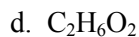
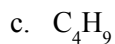


NAME _____ DATE _____ PERIOD _____

PRACTICING EMPIRICAL AND MOLECULAR FORMULAS

1. Determine the empirical formulas for each of the molecular formulas found below. If it is already reduced, write "EF" next to the formula. If you can reduce it, do so and write the new formula below the existing one.



2. Determine the Molecular Formulas for the following scenarios:

a. A compound with an empirical formula of $\text{C}_2\text{H}_8\text{N}$ and a molar mass of 92 g/mol.

b. A compound with an empirical formula of $\text{C}_4\text{H}_4\text{O}$ and a molar mass of 204 g/mol.

c. A compound with an empirical formula of C_2OH_4 and a molar mass of 88 g/mol.

d. The empirical formula for trichloroisocyanuric acid, the active ingredient in many household bleaches, is OCNCl . The molar mass of this compound is 232.4 g. What is the molecular formula of trichloroisocyanuric acid?

3. Determine the Empirical AND the Molecular Formulas for the following scenarios:

a. Caffeine consists of 49.5% C, 5.15% H, 28.9% N, 16.5% O by mass. Determine the empirical formula for caffeine. Then determine the molecular formula for caffeine, given a molar mass of 195 g/mol.

b. Determine the empirical formula for a compound made of 114.8 g of Nitrogen and 262.4 g of Oxygen. The molar mass of the molecular formula is 92.0 g/mol. Determine the molecular formula of this compound.

c. The molar mass of a compound is 216.0 g/mol. Analysis of a sample of the compound indicates that it contains 29.4 g N and 84.0 g O. Find its molecular formula.

d. Determine the molecular formula of a compound that consist of 55.0 g of Nitrogen and 7.86 of Hydrogen. The molar mass of the molecular formula is 80.0 g/mol.