

Empirical Formula, Molecular Formula and Hydrates Worksheet

1. Write the Empirical Formula for Each of the Following:
 - a. P_4O_6 _____
 - b. C_6H_9 _____
 - c. CH_2OHCH_2OH _____
 - d. $BrCl_2$ _____
 - e. $C_6H_8O_6$ _____
 - f. $C_{10}H_{22}$ _____
 - g. $Cu_2C_2O_4$ _____
 - h. Hg_2F_2 _____

2. Write the empirical formula for each of the following (show your work):
 - a. A compound composed of: 72% iron (Fe) and 27.6% oxygen (O) by mass. _____

 - b. A compound composed of: 9.93% carbon (C), 58.6% chlorine (Cl), and 31.4% fluorine (F).
_____ (This compound is commonly known as Freon)

 - c. A compound composed of: 0.556g carbon (C) and 0.0933g hydrogen (H). _____

3. Write the molecular formula for each of the following: (amu – atomic mass units, for our purposes it is equivalent to molecular mass of the compound).
 - a. A compound with a molecular mass of 70.0 amu and an empirical formula of CH_2 .

 - b. A compound with a molecular mass of 46.0 amu and an empirical formula of NO_2 .

4. Can the molecular formula of a compound ever be the same as the empirical formula for the compound?
Explain your answer.