3.36 Describe how the knowledge of the percent composition by mass of an unknown compound can help us identify the compound.

3.39 Tin (Sn) exists in Earth’s crust as SnO₂. Calculate the percent composition by mass of Sn and O in SnO₂.

3.40 Calculate the percent composition of chloroform (CHCl₃).

3.48 What is the mass of F, in grams, in 24.6 g of tin(II) fluoride (SnF₂)?

3.50 What are the empirical formulas of the compounds with the following compositions?
   (a) 40.1 % C, 6.6 % H, 53.3 % O

   (b) 60.1 % K, 18.4 % C, 21.5 % N
A. An unknown hydrocarbon is found to contain 84.21% C by mass. What is its empirical formula?

B. The general formula of Epson salts can be written as MgSO₄ · x H₂O. When 5.061 g of this hydrate is heated to 250°C, all the water of hydration is lost, leaving 2.472 g of MgSO₄. What is the value of x?