

Percent By Mass, Empirical Formulas, and Combustion Analysis

1. What is the percent by mass of phosphorous, calcium, and oxygen in $\text{Ca}_3(\text{PO}_4)_2$?
2. Write the empirical formula for Al_8O_{12} .
3. If a compound contains 59.9% carbon, 8.06% H, and 32.0% O, what is the empirical formula?
4. A compound contains 28.03 g Mg, 21.60 g Si, 1.16 g H, and 49.21 g of O. What is the empirical formula?
5. A 3.87 g sample of an acid contains C, H, and O. During the combustion analysis, 5.80 g of CO_2 and 1.58 g of H_2O was produced. What is the empirical formula of this acid? If the molar mass of the acid was determined to be 176.12 g/mol, what is the molecular formula?