

Formula from Data

Chemistry

Deriving formulae from mass, percentage or combustion data.

Works from percentage or from mass.

1

Take 100 g if given percentages

Percentages become grams.

2

Divide each mass by its Ar

Gives moles.

3

Divide all by the smallest

Gives the ratio.

4

Multiply to whole numbers

$\times 2$ for .5, $\times 3$ for .33.

5

Scale to Mr for molecular formula

$\text{Mr} \div \text{empirical mass}$, then multiply.

COMBUSTION DATA

Mass of CO_2 gives moles of C

Mass of H_2O gives moles of H ($\times 2$)

Oxygen by difference from the sample mass

In combustion analysis, oxygen is always found by difference — it cannot be measured directly from the products.