

Experimental techniques to calculate mole ratios in formulae

	Experimental technique	Data obtained and calculation
1	Heat a hydrated salt to remove all its water of crystallisation (e.g. heating hydrated copper(II) sulfate)	Data: Masses of water and dehydrated salt. Calculate moles of each, then determine the smallest whole-number ratio between them.
2	Reacting a metal with oxygen (e.g. magnesium)	Data: Mass of metal at start, mass of metal oxide at the end, and therefore mass of oxygen in the metal oxide. Calculate moles of metal and of oxygen in the metal oxide, then determine the smallest whole-number ratio between them.
3	Removing the oxygen from a metal oxide (e.g. copper oxide using hydrogen or methane to remove the oxygen)	Data: Mass of copper oxide at start, mass of copper at the end, and by subtraction the mass of oxygen in the copper oxide. Calculation as above.