

## IGCSE Chemistry (9-1) Specification 1(e)

### (e) Chemical formulae, equations and calculations

#### Students should:

- 1.25** write word equations and balanced chemical equations (including state symbols):
- for reactions studied in this specification
  - for unfamiliar reactions where suitable information is provided
- 1.26** calculate relative formula masses (including relative molecular masses) ( $M_r$ ) from relative atomic masses ( $A_r$ )
- 1.27** know that the mole (mol) is the unit for the amount of a substance
- 1.28** understand how to carry out calculations involving amount of substance, relative atomic mass ( $A_r$ ) and relative formula mass ( $M_r$ )
- 1.29** calculate reacting masses using experimental data and chemical equations
- 1.30** calculate percentage yield
- 1.31** understand how the formulae of simple compounds can be obtained experimentally, including metal oxides, water and salts containing water of crystallisation
- 1.32** know what is meant by the terms empirical formula and molecular formula
- 1.33** calculate empirical and molecular formulae from experimental data
- 1.34C** understand how to carry out calculations involving amount of substance, volume and concentration (in  $\text{mol/dm}^3$ ) of solution
- 1.35C** understand how to carry out calculations involving gas volumes and the molar volume of a gas ( $24\text{dm}^3$  and  $24000\text{cm}^3$  at room temperature and pressure (rtp))
- 1.36 practical:** know how to determine the formula of a metal oxide by combustion (e.g. magnesium oxide) or by reduction (e.g. copper(II) oxide)