Chemistry Formula Sheet

Chapter by chapter, topic by topic. Written by the PadhoNa team for quick revision.

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CHAPTER 34

Purification and Characterisation of Organic Compounds

Purification methods

crystallisation, sublimation, distillation (fractional, steam, reduced pressure), chromatography

CHROMATOGRAPHY

$$R_f = \frac{\text{distance moved by the substance}}{\text{distance moved by the solvent}}$$

Quantitative analysis

CARBON AND HYDROGEN

$$\%\mathrm{C} = \frac{12}{44} \times \frac{m_{\mathrm{CO_2}}}{m} \times 100, \qquad \%\mathrm{H} = \frac{2}{18} \times \frac{m_{\mathrm{H_2O}}}{m} \times 100$$

DUMAS (N)

$$\%\mathrm{N} = \frac{28}{22400} \times \frac{V_{\mathrm{N_2}}(\mathrm{STP, mL})}{m} \times 100$$

KJELDAHL (N)

$$\%\mathrm{N} = \frac{1.4 \times N \times V}{m}$$

CARIUS (HALOGEN, S)

$$\%\mathrm{X} = \frac{\text{at. mass of X}}{\text{mol. mass of AgX}} \times \frac{m_{\mathrm{AgX}}}{m} \times 100; \qquad \%\mathrm{S} = \frac{32}{233} \times \frac{m_{\mathrm{BaSO_4}}}{m} \times 100$$

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