Exercise 1.52 – Solution preparation

Q152-01 Calculate the molarity of the solution prepared by dissolving 1.00g of sodium hydroxide in $50cm^3$ of water and making the volume up to $250cm^3$ in a volumetric (graduated) flask.

Q152-02 Calculate the molarity of the solution prepared by dissolving 4.60g of sodium hydrogen phthalate (M^r = 232.23) in $50cm^3$ of water and making the volume up to $250cm^3$ in a volumetric (graduated) flask.

Q152-03 A $25cm^3$ pipette of 2M hydrochloric acid solution was removed from a stock bottle and placed in a $250cm^3$ volumetric flask, which was then made up to the mark with distilled water. Calculate the molarity of the final solution.

Q152-04 A $10cm^3$ sample of 1.20M copper sulphate solution was transferred to a $250cm^3$ volumetric flask, which was then made up to the mark with distilled water. Calculate the molarity of the final copper sulphate solution.

Q152-05 Calculate the volume of 16M hydrochloric acid needed to prepare $2dm^3$ of 2M HCl solution

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Q152-06 Excess copper carbonate powder was stirred into a $50cm^3$ sample of 2M sulphuric acid and stirred until the reaction had completely ceased. The excess (unreacted) copper carbonate was then filtered off and the filtrate made up to 250 cm^3 in a volumetric flask. Calculate the molarity of the final copper sulphate solution.

Q152-07 Calculate the mass of potassium manganate VII ($KMnO_4$) required to prepare $250cm^3$ of 0.02M solution.

Q152-08 Calculate the mass of sodium thiosuphate, $Na_2S_2O_3.5H_2O$, required to prepare $100cm^3$ of 0.1M solution.

Q152-09 Calculate the volume of concentrated sulphuric acid (36M in hydrogen ions) needed to prepare $1dm^3$ of 1 mol dm^{-3} solution.

Q152-10 Calculate the mass of anhydrous aluminium chloride needed to give $600cm^3$ of a solution, which is 0.1 mol dm^{-3} in chloride ions.
