0 5 Ethanedioic acid ($H_2C_2O_4$) is a diprotic acid. Beekeepers use a solution of this acid as a pesticide.

A student carried out a titration with sodium hydroxide solution to determine the mass of the acid in the solution. The student repeated the titration until concordant titres were obtained.

$$H_2C_2O_4(aq) + 2NaOH(aq) \longrightarrow Na_2C_2O_4(aq) + 2H_2O(l)$$

0 5 . 1 The student found that 25.0 cm^3 of the ethanedioic acid solution reacted completely with 25.30 cm^3 of 0.500 mol dm^{-3} sodium hydroxide solution.

Calculate the mass, in mg, of the acid in 25.0 cm^3 of this solution.

[4 marks]

Mass of acid _____ mg

0 5 . 2 The student used a wash bottle containing deionised water when approaching the end-point to rinse the inside of the conical flask.

Explain why this improved the accuracy of the titration.

[1 mark]

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0 5 . 3 Give the meaning of the term concordant titres.

[1 mark]

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