



Chemistry

CHM3T/P10/task

Unit 3T AS Investigative Skills Assignment

Task Sheet

Determination of the concentration of ethanoic acid in vinegar

Vinegar is used widely in the food industry. Vinegar is a solution mainly of ethanoic acid. A manufacturer regularly checks the concentration of ethanoic acid in batches of vinegar by titration with sodium hydroxide solution.

You are provided with a diluted vinegar solution. Titrate this solution with the $0.100 \text{ mol dm}^{-3}$ solution of sodium hydroxide provided.

Wear eye protection at all times.

For the purpose of this task assume that all solutions are toxic and corrosive.

Procedure

1. Rinse the burette with the diluted vinegar solution. Set up the burette and, using a funnel, fill it with the diluted vinegar solution. Record the initial burette reading in a table of your own design on the Candidate Results Sheet.
2. Using a pipette filler, rinse the pipette with the sodium hydroxide solution provided. Using this pipette, transfer 25.0 cm^3 of the sodium hydroxide solution to a 250 cm^3 conical flask.
3. Add 3 or 4 drops of phenolphthalein indicator to the conical flask.
4. Add the diluted vinegar solution from the burette until the mixture in the conical flask just turns colourless. Record your final burette reading in your table.
5. Rinse the conical flask with distilled or de-ionised water and repeat the titration until you obtain **two** titres which are within 0.10 cm^3 of each other. (You should do no more than five titrations.)
Have one of your final burette readings checked by your teacher.
6. Calculate and record the average titre on the Candidate Results Sheet. Indicate clearly the titres you used in calculating this average titre.

ISA CHM3T/P10 Candidate Results SheetCentre Number

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Teacher Group

Candidate Name Candidate number

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Results

Record your titration results in an appropriate table in the space below.

Average titre / cm³

For Teacher's use only				
B		R		P
C		A		