

Titration Analysis of Vinegar

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Practical:

Abstract

In this experiment we are measuring the concentration of acetic acid in vinegar to determine whether the vinegar has been adulterated by being watered down. This is done by titration and with a pH meter for comparison with the reaction indicator. To detect the end point the pH is measured and can be compared with the colour change of an indicator. The experiment helps to reinforce understanding of mole calculations and volumetric analysis and to demonstrate features of acid-base titrations. Associated with this experiment is a spreadsheet model that allows students to vary conditions and see how pH changes. There are 2 spreadsheets: strong acid-strong base, and weak acid-strong base.

Intended academic level

Undergraduate 1

Duration

2 hours

Learning Outcomes

1. To reinforce level 1 teaching on mole calculations and volumetric analysis.
2. To demonstrate features of acid-base titrations.

Materials

Vinegar

0.02 M Sodium hydroxide

Bromophenol blue and phenolphthalein

0.02 M Hydrochloric acid

Costs

Further comments

Reading

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