

Lesson 3a – dilution before titration

The acetic acid (ethanoic acid) concentration of a brand of vinegar is to be determined using volumetric analysis. A 20.00 mL aliquot is taken from the original bottle of vinegar and placed in a 200 mL volumetric flask and made to the mark using distilled water.

A volume of 25.00 mL was transferred from the volumetric flask to a 100mL conical flask and titrated to the end point using a standard solution of 0.201 M NaHCO₃. An average titre of 20.16 mL was obtained. Find the concentration of acetic acid in the original sample in %m/v.

- a) Write the balanced overall equation for the reaction taking place in the conical flask between the ethanoic acid and the NaHCO₃.
- b) Find the mol of NaHCO₃ in the average titre
- c) Find the mol of acetic acid in the conical flask.
- d) Find the concentration, in mol/L, of acetic acid in the volumetric flask
- e) Find the concentration in mol/L in the original undiluted sample
- f) Find the concentration of acetic acid, in %m/v, in the original sample .



Unpack the information by drawing a flow diagram.

