3- End-point determination by conductometric titrations

In an acid-base titration, changes in conductance will be mainly due to changes in hydrogen or hydroxyl concentration. This is because the conductance of hydrogen or hydroxyl ions is appreciably greater than the conductance of other ions.

Requirements

Conductivity meter, 0.1 M NaOH, strong acid, 50 ml burette, 100 ml

beaker.

Method

(a) Place a 25 ml aliquot of a strong acid in a 100ml beaker, and take a conductivity reading.

(b) Add exactly 2ml portions of NaOH from the burette to a total of 50 ml, stir the mixture well, and take a conductivity reading after each addition.

(c)When the experiment is complete, rinse the conductivity cell well with distilled water and put away carefully.

Calculations

Plot a graph of ***conductivity*** in ohms^{-1} against ***titre*** in ml of acid; the graph can be taken as two straight lines which intersect at an 'end-point'. What explanation can you offer of the relative slopes of the two lines? Determine the titre value at the 'end-point'; does it correspond to the conventional indicator end-point?