Using concentrations of solutions: Worksheet 3.11

Titrations

1. (a) What are the following used for in a titration:

 (i) burette

 (ii) pipette

 (iii) pipette filler

 (iv) indicator

 (v) white tile?

 (b) Describe:

 (i) where to measure a burette reading

 (ii) when you have reached the end point

 (iii) how to fill a burette safely

2. (a) Eva uses a pipette to measure 25.0 cm3 of sodium hydroxide solution. She titrates this against 0.10 mol/dm3 hydrochloric acid. The average titre is 19.8 cm3. Calculate:

 (i) the number of moles of hydrochloric acid used.

 (ii) the number of moles of sodium hydroxide this reacts with.

 (iii) the concentration of the sodium hydroxide in mol/dm3.

 (iv) the concentration of the sodium hydroxide in g/dm3.

 (b) Jack carries out a titration to find the concentration of a solution of sodium hydroxide. He measures 25.0 cm3 of sodium hydroxide solution into a conical flask. He titrates this against 0.25 mol/dm3 of sulfuric acid in the burette. These are his burette readings:

|  |  |
| --- | --- |
|  | **Volume of acid used/cm3** |
| **Titration** | **Trial** | **1** | **2** | **3** |
| Initial burette reading/cm3 | 0.5 | 10.5 | 20.4 | 30.4 |
| Final burette reading/cm3 | 11.5 | 20.4 | 30.4 | 40.5 |
| Titre |  |  |  |  |

 Calculate the concentration of the sodium hydroxide solution.