22nd July, 2019

Experiment 04:

Data Collection:

|  |  |  |  |
| --- | --- | --- | --- |
| Reading No. | Initial Burette  Reading / | Final Burette  Reading / | Difference / |
| 01 |  |  |  |
| 02 |  |  |  |
| 03 |  |  |  |

Calculation:

Average

Percentage Error

Experiment No. 4

Name of Experiment: Standardization of Sodium Thiosulphate Solution with a Standard Potassium Dichromate Solution

Theory:

The strength of is determined by oxidation with . is present and provides the ions that oxidize to . Starch is then used to give a blue colour, and from a burette reduces the ions.

Apparatus Required:

Conical Flask, Burette, Pipette, Volumetric Flask, Funnel

Procedure:

1. of solution was taken in a conical flask and diluted to roughly .
2. Roughly of was added to the conical flask, which was shaken until the salt dissolved.
3. About of concentrated acid was added to the conical flask.
4. standard solution was added to the conical flask using a pipette. The flask was immediately covered with a watch glass, shaken and placed in a dark cupboard for five minutes.
5. At the end of five minutes, the glass watch was rinsed and the residue added to the conical flask. This was then diluted to roughly .
6. The liberated iodine in the conical flask was titrated with sodium thiosulphate with the help of a burette until the brown solution turned light yellow. The initial reading of the burette was noted.
7. About of starch solution was added to the conical flask, turning the solution deep blue. The titration was the continued until a light blue colour had been achieved. The final burette reading was taken.
8. The steps were repeated until the results obtained were deemed to be fairly accurate. The average of the most accurate results was used in calculations.
9. The strength of the sodium thiosulphate solution was obtained using the following formula:

Data:

|  |  |  |  |
| --- | --- | --- | --- |
| Reading No. | Initial Burette  Reading / | Final Burette  Reading / | Difference / |
| 01 |  |  |  |
| 02 |  |  |  |
| 03 |  |  |  |

Calculation:

Average

Percentage Error

Results:

The strength of the sodium thiosulphate solution is .

Discussion:

All the apparatus was thoroughly cleaned before being set up. The results obtained are fairly accurate as the percentage error is small.