Chemistry Lab

Procedure:

1. Take a burette from the glassware shelf and place it on the workbench.
2. Fill the burette with 50mL of 0.2M potassium permanganate solution. Record concentration.
3. Take flask and add 10mL of New hydrogen peroxide (New H2O2).
4. Add 2mL of 6M sulfuric acid to flask.
5. Titrate the hydrogen peroxide with the KMnO4 solution to the purple endpoint of excess MnO4- ion. First do rough titration by adding KMnO4 2mL at a time in order to quickly find range in which endpoint is reached. Do fine titration two times in order to obtain exact results.
6. Repeat the procedures with the bottle of old hydrogen peroxide (old H2O2).

Data:

Molarity of KMnO4: 0.2M

Volume of H2O2: 10mL

Titration of KMnO4 and New H2O2

Trial 1(rough) Trial 2(fine) Trial 3(fine)

Initial Volume: 50mL 50mL 50mL

Final Volume: 30mL 31.90mL 31.95mL

Titration of KMnO4 and Old H2O2

Trial 1(rough) Trial 2(fine) Trial 3(fine)

Initial Volume: 50mL 50mL 50mL

Final Volume: 36mL 37.30mL 37.35mL

Calculations/Interpretations-Show all math performed, formulas, label. Use proper significant figures.

Trial2 Trial 3

Volume of KMnO4 (new H2O2): 50mL-31.90mL=18.1mL 50mL-31.95mL= 18.05mL

Average: (18.1mL +18.05mL)/2 = 18.075mL

Trial 2 Trial 3

Volume of KMnO4 (old H2O2): 50mL-37.30mL= 12.7mL 50mL- 37.35mL= 12.65mL

Average: (12.7mL+12.65mL)/2 = 12.675mL

1. Moles of KMnO4 (new H2O2):

2. Moles KMnO4 (old H2O2):

Balanced Equation:

2KMnO4 + 5H2O2 + 3H2SO4 => K2SO4 + 2MnSO4 + 8H2O + 5O2

Using the average values from trials 2 and 3 and the balanced equation, calculate the following:

3. Moles H2O2 (new):

4. Moles H2O2 (old):

5. Molarity H2O2 (new):

6. Molarity H2O2 (old):