Hanna Titration Procedure

Peracetic Acid, Titrimetric Method

Description

Method for the determination of peracetic acid (PAA) via 2-equivalence point titration. The results is expressed in

% Peracetic Acid.

Meter

Automatic Potentiometric Titrator - HI932

Electrodes

• pH Electrode - HI1131B

Reagents

- 0.1N Sodium Hydroxide HI70456
- Potassium Hydrogen Phthalate, 20g HI70401
- Deionized Water HI70436

Accessories

- Analytical Balance
- 150 mL Glass Beakers
- Plastic Dropper
- 100 mL Volumetric Flask
- Stir Bar
- Magnetic Stirrer
- 10 mL Class A Glass Pipette

Device Preparation

- Connect the pH electrode and temperature probe to Analog Board 1 on the titrator.
- Press "Select Method" from the main screen. Use the arrow keys to highlight the 'Peracetic Acid' method and press "Select".
- Install a 25-mL burette with 0.1N NaOH (HI70456) on pump one and verify that no air bubbles are present in the burette or tubing. If necessary, prime the burette until all the air has been removed completely.
- For the determination of the exact concentration of the 0.1N sodium hydroxide, follow HI10001EN 0.1N NaOH Titrant Concentration.

Electrode Preparation

- Remove the storage cap from the pH electrode.
- Rinse the electrode with deionized water.
- Place the electrode in the electrode holder.
- Loosen the fill cap.

Sample Preparation

- Using a plastic dropper, weigh out approximately 1g of sample into the 100 mL volumetric flask, and record the exact weight.
- Bring the flask up to volume using deionized water.
- Place a stir bar in your volumetric flask and allow it to stir on a stir plate until it is mixed thoroughly.
- Pour some of the diluted sample into a beaker.
- Using a graduated or class A pipette, immediately transfer a 10 mL aliquot of your sample to a 150 mL glass beaker.
- Bring the beaker up to about half-way with deionized water.
- Enter the "Method Options" menu and scroll down to "Dilution Option".
- Enable the "Dilution Option".
- In the "Dilution Options" menu, enter the following information. Final Dil Vol 100.0 mL Aliquot Vol 10.0 mL Analyte Size to be Dil (enter weight of sample from

the 1st step listed under Sample Preparation).

• Save the method and exit to return to the main titration screen.

Analysis

- Place the beaker under the stirrer assembly and lower it to immerse the pH electrode, temperature probe and stirrer. Ensure that the reference junction of the electrode is 5-6 mm below the surface. NOTE: The dispensing tip should be in contact with the surface of the sample (slightly submerged).
- Press "Start". The titrator will start the analysis.
- At the end of titration, when the second equivalence point is reached, 'titration complete' will appear with peracetic acid. The result is expressed in % Peracetic Acid.*
- Remove the pH electrode, temperature probe, and stirrer from the sample and rinse them thoroughly with deionized water.
- Record the result.
- *This method can be set to view two equivalence points. The first equivalence point can be determined and report the amount of acetic acid present, and the second equivalence point will report the amount of peracetic acid. To do so, enable 2EQPT in the Method Options.