STANDARD OPERATING PROCEDURE: OPERATION OF A BENCH TOP PH METER

Document Information

- **Document ID:** COR-001
- **Version:** 1.0
- **Author:** Coker Omowunmi Rebecca

1.0 Objective

To accurately measure the pH of an aqueous solution using a calibrated benchtop pH meter.

2.0 Safety Precautions

- **Personal Protective Equipment (PPE):** Always wear safety goggles and a lab coat.
- **Equipment Handling:** The pH electrode is a fragile glass instrument; handle it with care to prevent breakage.
- **Emergency:** Ensure a chemical spill kit is readily accessible in the event of a chemical spill.

3.0 Required Materials and Equipment

- Benchtop pH meter with a glass electrode
- pH buffer solutions (e.g., pH 4.01, 7.00, and 10.00)
- Deionized (DI) water wash bottle
- Waste beaker
- Sample solution
- Kimwipes or other lint-free tissue

4.0 Procedure

4.1 Calibration

1. Turn on the pH meter and allow it to warm up for approximately 5 minutes.
2. Rinse the electrode with DI water and gently blot it dry.

   Note: Do not wipe the electrode bulb.
3. Place the electrode in the pH 7.00 buffer solution. Wait for the reading to stabilize, then press the **"Calibrate"** button.
4. Remove the electrode, rinse it with DI water, and blot it dry.

5. Place the electrode in the pH 4.01 buffer solution. Wait for the reading to stabilize, then press the **"Calibrate"** button.
6. The meter will indicate that the calibration is complete and it is ready for measurement.

4.2 Sample Measurement

1. Rinse the calibrated electrode with DI water and blot it dry.
2. Submerge the electrode in the sample solution.
3. Allow the reading to stabilize. This is often indicated by a "stable" icon on the meter's display.
4. Record the final pH value and temperature.
5. After measurement, rinse the electrode with DI water and return it to its storage solution.