

**Connecticut Department of Public Safety
Division of Scientific Services
Forensic Laboratory**

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Document Title: Calibration of pH Meter QC

Controlled: Yes, with red stamp present

Controlled By: Quality Manager

Prepared By: _____

Date: _____

Approved By: _____

Date: _____

A. PURPOSE:

To maintain and calibrate the pH meter.

B. RESPONSIBILITY:

Forensic Science Examiner 1 and 2 in the Forensic Biology Section. Ordering information is maintained in a log book in the Forensic Biology Section. For additional information, refer to the Equipment Inventory Appendix.

C. PROCEDURE:

1. The pH meter should be calibrated with the appropriate pH standards quarterly, per manufacturer's instructions.
2. Calibration
 - a. Not necessary before use unless pH needed is between 7&10
 - b. Not to be used with Tris, proteins, sulfides or anything containing silver.
 - c. Uncover fill hole.
 - d. Soak electrode for one (1) hour in storage solution.
 - e. Turn power on.
 - f. Rinse electrode with dH₂O, blot with kimwipe (don't rub or wipe).
 - g. Rinse electrode with pH 7 buffer.
 - h. Place electrode into pH 7 buffer.
 - i. Wait until "pH" icon stops flashing and press Measure, then press Calibrate, ("cal 1" will appear).
 - j. Wait until "pH" icon stops flashing and press Calibrate ("cal 2" will appear).
 - k. Rinse electrode with dH₂O, blot.

- C. 2. 1. Rinse electrode with pH 4 buffer (use pH 10 if checking higher pH).
- m. Place electrode into pH 4.
- n. Wait until “pH” icon stops flashing and press Measure, calculated slope will be displayed (acceptable slope range 92%-102%).
3. Date, initials and slope range should be recorded in the appropriate Equipment Log Sheet.
4. If the calculated slope is out of the acceptable range (92%-102%), repeat the calibration. If the calculated slope continues to be unacceptable, remove from service until the problem is corrected and record in the appropriate Equipment Log Sheet.
5. All equipment that requires service by an outside vendor will be validated/calibrated before it is returned to service.
6. Maintain level of filling solution inside the electrode just below the fill hole as needed.
7. Maintain level of storage solution inside protective cap on end of electrode as needed.
8. Securely cover fill hole with attached plug to prevent evaporation when not in use.
9. The pH standards, filling solution and storage solution are stored in a designated cabinet at room temperature.

D. REFERENCES:

1. Thermo Electron Corporation. Users Guide Refillable pH Electrode.
2. Thermo Electron Corporation. Orion Star Series Meter User’s Guide.