

SOP-E023

Calibration of the Orion Research EA 920 Expandable ionAnalyzer

Objective: To calibrate the Orion Research EA 920 Expandable ionAnalyzer using two standard buffers so that the instrument is ready for determination of sample pH

Procedure:

1. Verify that the Orion Research EA 920 Expandable ionAnalyzer is in status 2 and that the mode is pH. The instrument is located in the Hansen building, room B050.
2. Set the function to standard 1 (STD 1).
- 3a. Remove the pH electrode from the storage solution.
- 3b. Rinse the electrode with Millipore filtered water and gently shake off excess.
4. Remove the snap top from the Coulter vial containing the pH 7.00 standard, insert the electrode, and wait.
5. When the READY message appears, press ENTER. The meter will automatically calibrate and switch to standard 2 (STD 2).
6. Rinse the electrode with Millipore filtered water and gently shake off excess.
7. Remove the snap top from the Coulter vial containing the pH 4.01 standard, insert the electrode, and wait.
8. When the READY message appears, press ENTER. The meter will automatically calibrate and switch to sample mode.
- 9a. Rinse the electrode with Millipore filtered water and gently shake off excess.
- 9b. Return the electrode to the storage solution and recover the Coulter vials.
10. Set function to SLOPE and verify that $92 < \text{slope} < 102$.
11. Set function to sample. Instrument is now ready to operate.

Discussion:

1. Fresh standards in clean vials should be set out at the beginning of every week.
2. The electrode filling solution should be replaced at the beginning of every week. This is accomplished by using a 1 ml pipette to withdraw the liquid through the opening near the top of the electrode and refilling the electrode from the squeeze bottle of filling solution (Ross Reference Electrode Filling Solution #81-00-07).
3. The hole at the upper end of the electrode should never be covered over unless the electrode is being transported or put into storage.

4. To calibrate with pH standards other than 7.00 and 4.01, follow the manual calibration technique described on page 10 of the EA 920 instruction manual. The manual is kept in the Hansen building, room B050. The calibration is the same except that buffer values are adjusted manually before pressing ENTER.
5. The instrument is always left plugged in and turned on. After any loss of power, the check out procedure on page 7 of the instruction manual should be performed before attempting to calibrate or use the instrument.

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Verified by: _____ **Date:** _____
Print Name Sign Name