

9145BN Low Maintenance™ pH Electrode

Electrode Preparation

1. Remove the protective shipping cap from the sensing element and save for storage.
2. Clean any salt deposits from the electrode exterior by rinsing it with distilled water.
3. Soak the electrode in pH electrode storage solution, Cat. No. 910001, for at least one hour.
4. Connect the electrode to the meter as described in the meter user guide.

Sample Requirements

This electrode has an epoxy outer body and should not be used in samples that contain organic solvents.

Ag/AgCl reference and combination electrodes are incompatible with samples containing silver complexing or binding agents such as TRIS, proteins and sulfides. To measure pH in such samples, use a ROSS pH electrode or double junction pH electrode. Proteins cause the additional problem of coating the sensing bulb and extra care should be taken.

pH Calibration Single-Buffer Calibration

1. Setup the meter according to meter user guide.
2. Rinse the electrode first with distilled water and then with the buffer used for calibration. The buffer should be near the expected sample pH. Place the electrode into the buffer.
3. Wait for a stable pH reading. Once the electrode reading is stable, set the meter to the pH buffer value at its measured temperature, as described in the meter user guide.

Two-Buffer Calibration

This procedure is recommended for precise measurements.

1. Select two buffers that bracket the expected sample pH. The first should be near the electrode isopotential point (pH 7) and the second buffer should be near the expected sample pH (pH 4 or pH 10).
2. Setup the meter according to meter user guide.
3. Rinse the electrode with distilled water then with the first buffer. Place the electrode into the first buffer.
4. Wait for a stable pH reading. Once the electrode reading is stable, set the meter to the pH buffer value at its measured temperature, as described in the meter user guide.
5. Rinse electrode with distilled water and then with the second buffer. Place the electrode into the second buffer.
6. Wait for a stable pH reading. Once the electrode reading is stable, set the meter to the pH buffer value at its measured temperature, as described in the meter user guide.
7. If all steps are performed correctly, and the slope should be between 92 and 102%. Proceed to the pH Measurement section.

pH Measurement

1. Calibrate the electrode as described in the previous section.
2. Rinse the electrode with distilled water and then with the sample.
3. Place the electrode into the sample.
4. When a stable reading is displayed, record the sample pH and temperature.

Electrode Storage

Short-term storage (up to one week): Soak the electrode in pH electrode storage solution, Cat. No. 910001. Do not store the electrode in distilled water, as this will shorten the electrode life.

Long-term Storage (more than one week): Rinse off any salt buildup on the electrode with distilled water, and remove any membrane/junction deposits as directed in the cleaning procedures below. Cover the sensing element with the protective cap, containing a few drops of pH electrode storage solution, Cat. No. 910001.

Electrode Maintenance

Inspect the electrode for scratches, cracks, salt crystal buildup or membrane/junction deposits.

Rinse off any salt buildup on the electrode with distilled water, and remove any membrane/junction deposits as directed in cleaning procedures below.

Cleaning Procedures

General Cleaning

1. Soak the electrode in 0.1 M HCl or HNO₃ for half an hour.

The electrode can also be soaked for 15 minutes in a 1:10 dilution of household laundry bleach or a 0.1 to 0.5% liquid detergent solution mixed with hot water. The solution should be stirred at a moderate to fast rate.

2. Soak the electrode in pH electrode storage solution for at least one hour.

Cleaning Solutions

Cat. No. 900021– pH cleaning solution A for removing protein contaminants.

Cat. No. 900022– pH cleaning solution B for removing bacterial contaminants.

Cat. No. 900023– pH cleaning solution C for general cleaning.

Cat. No. 900024– pH cleaning solution D for removing oil and grease contaminants.

Cat. No. 900020– pH cleaning solution kit, includes cleaning solutions A, B, C and D.

Warranty

For the most current warranty information, visit www.thermo.com/water.

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