

Technical Note

Care of pH and pH/ORP Combination Sensors

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Storage

For short-term storage (several days), immerse the sensor tip in pH 4 buffer using the supplied electrode storage bottle. Tighten the cap to prevent drying. Alternatively, pH 7 buffer can be used for a few days.

For long-term storage (several weeks) prepare a storage solution by mixing pH4 buffer with a high concentration potassium chloride solution (58,670 microSiemen/cm conductivity calibration solution for example) in a volume ratio of about 1:10. Immerse the sensor in this solution using the electrode storage bottle. Tighten the cap to prevent drying. Prior to use, condition the sensor by rinsing with deionized water and soaking it 15 minutes.

Maintenance

Replace the reference filling solution every five to six months or when:

- The sensor fails to calibrate with a reasonable slope and offset
- Readings drift
- Readings during calibration at pH 7 are greater than +20 mV or less than -20 mV

Clogged reference junction: Replace the junction when the sensor fails to calibrate, even after replacing the reference filling solution.

Cleaning

If the pH bulb or platinum electrode is obstructed with foreign material, the sensor can behave erratically, exhibit a slow response, or have a large offset. The specific type of contaminant will determine the method of cleaning.

General recommendations:

- Always try to avoid wiping the glass pH sensing bulb. In the case of stubborn contamination,

limited light wiping with a soft cloth can be done in conjunction with any of the specific cleaning steps outlined below.

- Avoid contamination of the sensor's electrical connector. The supplied protective cap can be installed prior to any cleaning steps.
- Any method that is acceptable with the pH bulb is also compatible with the ORP platinum electrode.

Typical cleaning: First, rinse the sensor tip under a running cold water faucet or use a gentle jet of clean water from a rinse bottle. If this is not sufficient select the specific method (or combination of methods) from the list below. After any of these methods have been applied, prepare the sensor for subsequent use by rinsing the sensor tip with water followed by an overnight soak in pH 4 buffer.

Crystalline deposits: First clean the sensor in mild soap and warm water. Then soak the sensor in 5% hydrochloric acid for 10-30 minutes. If this fails to remove the deposits, you can alternate soaking in 5% hydrochloric acid and 5% sodium hydroxide solution.

Oily or greasy residue: Use warm water with mild soap. Follow with a generous water rinse. Isopropyl alcohol can be used for short soaking periods of up to an hour. Strong solvents (chlorinated solvents, ethers, or any ketones including acetone) must be avoided.

Protein-like material, or slimy films: First clean the sensor in mild soap and warm water. Then soak in a 0.1M HCl solution for 10 minutes and rinse with DI water.

For more information contact In-Situ Inc.

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