

LAQUAtwin pH Sensor Maintenance Procedures

Proper usage and maintenance of the LAQUAtwin pH meter, especially the pH sensor that comes in contact with samples, is important to maintain the accuracy and prolong the life span of the instrument.

Materials Needed



pH 7.00 buffer
(Part no. 3999960109)



Clean water
(e.g. distilled, deionized, tap)



Cotton buds



Soft tissue



Cleaning Solution 220 (Part no. 3014028653) - contains 10% thiourea and 1% hydrochloric acid (HCl) for removing inorganic residues on sensing membrane and junction



Cleaning Solution 250 (Part no. 3200366771) - contains < 0.5% enzyme protease, < 0.1% sodium azide, and other ingredients (See SDS) for removing protein residues on sensing membrane and junction

Conditioning

A dry pH sensor may give erratic reading or slow response. Condition the pH sensor before using it for the first time and after storing it dry. If there is white powder or salt buildup on the junction after dry storage, simply rinse off with water. This is normal.

1. Place few drops of pH 7.00 buffer onto the pH sensor. Make sure that the whole flat sensor is covered with the solution.
2. Leave the pH buffer for at least 1 hour to allow the solution to hydrate the pH sensor.
3. Rinse the pH sensor with water and blot it dry with soft tissue.
4. Perform calibration with fresh pH buffers prior to sample measurement.

Cleaning

A clean pH sensor is necessary for performing an accurate pH measurement. The cleaning solution will depend on what sample was tested with the sensor.

Read the safety data sheet (SDS) of the cleaning solution to be used and wear the proper personal protective equipment before handling. Download the SDSs of HORIBA cleaning solutions at www.horiba-laqua.com.

1. Remove unwanted sample residues left on the pH sensor by using an appropriate cleaning solution. For most samples, use mild detergent and clean water. For samples containing oil, proteins, and stain-causing substances, use the indicated cleaning solutions below.

- Oils – place few drops of warm water and mild detergent solution onto the sensor. Never use any organic solvent (e.g., acetone, ethanol, etc.) to clean the pH sensor as it may cause damage and shorten the sensor lifespan. This usage will also void the sensor warranty.
 - Proteins – place few drops of cleaning solution 250 onto the sensor and leave for 30 minutes.
 - Stains – place few drops of cleaning solution 220 or 0.1 M HCl onto the sensor and leave for 30 minutes.
2. Gently, wipe the sensor using a cotton bud. Avoid applying pressure and repeat step 1, if needed.
 3. Rinse the pH sensor with water and condition it (See Conditioning).

If calibration with fresh buffers failed repeatedly and cleaning did not restore the pH sensor performance, replace the pH sensor with a new one (Model S010, Part no. 3200459834). The pH sensor is a consumable product and its performance deteriorates over time even under normal operating condition.

If disinfection is needed, wipe the surface of meter body and sensor with a clean cloth wet with ethanol or use alcohol wipes. For the flat sensor, place drops of 5% sodium hypochlorite (NaClO) solution for 5 to 30 minutes then rinse thoroughly with sterile water.

Storage

Store the clean pH sensor in dry condition. Never leave distilled or deionized water on the pH sensor for long period as salts may leach out and reduce sensor life. Condition the pH sensor prior to next use (See Conditioning).

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