Nova Analytics Corporation

Pinnacle series

ELECTRODES

pH Combination Electrodes

The pH input connectors are BNC. The temperature input connectors of "3-in-1" type electrodes are RCA or Banana type. The temperature sensor is a 30K thermistor which is built into the electrode.

Ion barrier technology produces the fast response of an Ag/AgCI electrode without the use of AgCI in the reference fill solution. The result is an electrode that is compatible with, and non-toxic to, biological buffers (Tris).

Pinnacle series electrodes were designed for durability und ease of maintenance in most aqueous sampling applications.

Calibration Buffers und Accessories

Catalog Number	Description
478540	4.00 Calibration Buffer
478570	7.00 Calibration Buffer
478510	10.01 Calibration Buffer
473676	Buffer Sachei Assortiment
477006	3M-KCI Fill Solution
477177	Pepsin Deproteinizing Solution with Activator

Operating Instructions

1. Prior to first usage or after long term storage, remove the wetting cap.
2. Soak the tip of the electrode in hot tap water for 5 minutes. Hold the electrode at the top and shake downward in the same manner as a clinical thermometer to remove any air that may be trapped at the tip of the electrode.
3. Soak the tip of the electrode in 25 mm of 7.00 buffer until the meter shows a stable value between 6.5 and 7.5.
4. Calibrate the meter and electrode according to the pH meter instruction manual and proceed with sample measurements.

Note: For best results always rinse the electrode in distilled water between measurements.

Precautions und Limitations

1. Do not allow the electrode reference solution to run dry. Add fill solution whenever the level falls more than 25 mm below the fill hole. Change completely every 1-2 months.
2. Do not use KCI Saturated with AgCI as the fill solution as it can damage the reference.
3. Do not allow the tip of plastic body electrodes to come in contact with vessels being heated. Plastic body electrodes are not suitable for prolonged use in samples that exceed 80°C.
4. Do not use the electrode in any fluoride or hydrofluoric acid solutions where the pH is less than 5.0 as it will dissolve the pH membrane.
5. Do not leave plastic body electrodes in organic solvents as the electrode tip and body may be damaged.
6. Always blot the electrode tip with a lint-free tissue. Wiping can produce a static charge.
7. Not for industrial use. These electrodes are designed for use in general laboratory applications by persons knowledgeable in safe laboratory practices. They are not designed for constant monitoring in process and manufacturing applications.

Electrode Maintenance und Storage

These electrodes require only routine maintenance to keep the electrode clean. The Refillable electrode also requires changing the 3M-KCI fill solution every 1-2 months. The electrode is supplied with fill solution in a dispensing bottle for use when changing the fill solution.

Electrodes can be stored for up to one week in 25 mm of 7.0 or 4.0 buffer. Never store electrodes in distilled water.

For longer storage fill the wetting cap with KCI solution und push the wetting cap onto the tip of the electrode.

Electrode Troubleshooting und Cleaning

Electrode performance can be reduced as a result of prolonged use, aging of the glass membrane or plugging at the reference junction. If your pH electrode is exhibiting slow response in the calibration buffers, low slope values, drift or erratic readings, proceed to the cleaning steps below.

The reference junction at the tip of your electrode is designed to allow the KCI inside the electrode to make an electrical contact between the reference inside the electrode and the sample on the outside. Some samples can cause the junction to become blocked.

Junction contamination can be caused by samples with organic materials such as oils or proteins, or from inorganic salts. Proceed with cleaning as follows:

a. Inorganic salts -Soak the tip of the electrode in hot tap water for 15 minutes und try to recalibrate. If still plugged soak the tip of the electrode in 0.1 M HCl acid for 10 minutes followed by 10 minutes in 0.1 M NaOH. Rinse the electrode and recalibrate,
b. Oils - Wash the tip of the electrode in a solvent such as alcohol or 50% acetone and water. Do not soak plastic body electrodes in solvents as they may also dissolve the electrode und rubber seals at the tip.
c. Proteins - Soak the tip of the electrode for 1 hour in a solution of 10% pepsin and distilled water with HCl acid (477177) added to bring the pH down to about 1. Rinse the electrode and soak in 7.0 buffer until the reading is stable

Electrode Performance Specifications

pH Range	0.00 to 14.00
Temperature Range	0 to 100°C
Zero Point	7.00 ± 0.5 pH or 0 ± 30 mV

Warranty

Nova Analytics warrants this product to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. Breakage is not covered by this warranty.
THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NOVA ANALYTICS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGES ARISING FROM THE USE OF THESE PRODUCTS NOR FOR CONSEQUENTIAL DAMAGES OF ANY KIND.

In the event that this product fails under normal laboratory conditions within the specified period because of a defect in material or workmanship, Nova Analytics will, at its option, repair or replace the product. Proof of purchase may be required. Contact Service for return authorisation and shipping instruction at 866 664 NOVA (6682) or 781 932 3191