

Instructions for Type 405-DPAS-SC pre-pressurized gel-reference pH Electrodes



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Introduction

The METTLER TOLEDO Type 405-DPAS-SC combination pH electrode is a low-maintenance, pre-pressurized, autoclavable electrode with a gel-type reference. The reference element incorporates a silver-ion trap to prevent silver sulfide contamination of the reference junction. The gel-type reference is also available in a combination ORP and as a separate reference electrode.

1. Preparation

After unpacking, examine the electrode for any mechanical damage.

METTLER TOLEDO electrodes are factory tested and are shipped ready-to-use. (To maintain factory pressurization, the Type 405-DPAS-SC electrodes have a silicone seal covering the ceramic diaphragm; this must be removed with the enclosed blade prior to use.) Remove the hydration cap and remove any electrolyte crystals by rinsing the electrode with distilled water. Pat dry; do not rub as this may build up a static charge and lengthen the response time.

Eliminate any air bubbles around the internal element in the pH-sensitive membrane.

2. Operation

METTLER TOLEDO pH electrodes can be used with most pH/mv meters. Follow manufacturer's instructions for use.

A two-point calibration is recommended, using fresh buffers of known pH values which bracket the sample pH; one buffer should be close to pH 7 to set the zero point. For fast routine analysis, a standardization using one buffer at a value near the sample pH can be done.

3. Sterilization

Type 405-DPAS-SC electrodes are steam-sterilizable in-situ and autoclavable. Follow operating instructions for the autoclave. It is advisable (but not necessary) to put the closure cap (p/n 00 201 1096) on the connector prior to autoclaving.

Repeated sterilization may cause the electrolyte to discolor slightly due to the elevated temperatures. This does not affect the electrode performance.

4. Maintenance

When properly cared for, METTLER TOLEDO electrodes should provide accurate results over thousands of uses.

Storage: Electrodes should be rinsed thoroughly after use and stored in 3M KCl or pH 4 buffer solution with added KCl. DO NOT store the electrode dry or in distilled or tap water; this dehydrates the pH membrane and the electrode must be rehydrated before use by immersing for several hours in 3M KCl.

Refilling: Type 405-DPAS-SC gel-reference electrodes are not refillable.

Protein Contamination: Clean the electrode with pH Electrode Cleaner for Proteins following instructions on the bottle.

Reactivating pH membrane: Use Reactivating Solution following directions CAREFULLY.

Servicing a clogged or dry reference junction: Immerse the electrode in a beaker of 3M KCl. Heat the solution to approximately 70° C (160° F) and allow electrode to soak in this solution as it cools to room temperature.

5. Troubleshooting

Symptom	Cause	Remedy
No response	Poor meter connection	Check connectors at the meter and at the electrode
	Cracked glass	Replace electrode
Slow response	Dehydrated pH membrane	Rehydrate (see Maintenance)
	Clogged reference junction	Soak in warm KCl (see Maintenance)
	Protein contamination	Use pH Electrode Cleaner (see Maintenance)
	Depleted gel layer	Use Reactivating Solution (see Maintenance)
Noise	Poor meter connection	Check connector
	Clogged reference junction	(See above)
Low slope	Dehydrated pH membrane	Rehydrate (see Maintenance)
	Contaminated membrane	(See above)

For further assistance, call our Customer Service Center at 800-352-8763.