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Jill's Tech Guide on

pH Electrode Guide – Care and Maintenance

There are many different makes and models of pH electrode so it can often be daunting or confusing deciding which one to buy for your science department. You may even already have some and are not sure how to check they are working properly. Hopefully this quick guide will help you get the best out of your pH electrodes.

pH electrodes work best when they have been cared for and maintained well.

There are various ways to care for your pH electrode that will ensure you get accurate pH readings:

- **Storage** – the end of the pH electrode may dry out unless it is stored in a storage solution or pH7 buffer

Place a small amount of storage solution (if provided) or pH 7 buffer in the cap to prevent the tip of the pH electrode from drying out. Store electrodes securely and preferably vertically and check on them regularly to ensure they haven't dried out. Add solution to the cap if needed.

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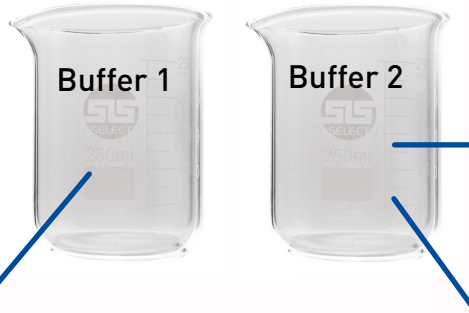
Calibration



Use 2 buffers!

Choose 2 buffers in the same range as your samples, e.g. if your experiment results are expected to be around pH8, calibrate using pH7 and pH10 (or similar).

Fresh buffers!

The buffer solution will degrade over time and therefore old buffers will not give accurate results during calibration – which will affect the accuracy of the pH electrode during use.

Same temperature!

Make sure the temperature of the buffers is similar to that of the samples you will test, e.g. indoor samples may be warmer than outdoor samples.

- **Cleaning** – after every use rinse or soak the pH electrode in distilled water or cleaning solution e.g. **www.science2education.co.uk/product/PHB1422**
- **pH sensor** – if your pH electrode has a glass tip, do not wipe it as this creates friction which interferes with the voltage reading of your electrode
- **Electrolyte** – ensure the electrolyte in your pH electrode is filled to the correct level, and top up if necessary (some are not refillable)
- **Batteries** – ensure batteries are working and contact points are clean and dry

N.B. If you have an instruction manual with your pH electrode – please follow their instructions.

FAQs

I have some old pH electrodes but I don't know if they work?

Start by checking the batteries and replace old batteries or clean contact points where necessary. Then check the tip of the electrode so see if it has dried out – if it has, soak in storage solution for 2 hours. Where possible top up electrolyte inside the electrode. Clean the tip of the electrode using deionised water and/or paper towel to remove any debris. Turn on and take pH reading of a known solution, i.e. pH7 buffer, then calibrate electrode using buffer solutions and recheck known solution.

I would like to order some new pH electrodes but don't know which ones would be best?

Get in touch with your Territory Sales Manager to discuss your options. They will be able to advise you which electrodes would be the most beneficial, based on what you intend to use the electrodes for and your budget. They can also discuss any special offers with you.

Below are links to a few pH electrodes on our website:

www.science2education.co.uk/product/PHM4600	ETI pH meter with electrode
www.science2education.co.uk/product/PHM9500	SLS Lab Basics pH Checker
www.science2education.co.uk/product/HI98100	Hanna HI-98100 Checker Plus pH Tester
www.science2education.co.uk/product/PHM4300	Hanna Edge Multi pH/C meter
www.science2education.co.uk/product/LOG3231	Data Harvest pH Glass Electrode