Quality Calibration and Care Solutions

Solutions Scientists Use in the Laboratory

4

pH Buffer 4

Solution for the calibration of pH meters

To ensure accurate readings, regularly calibrate your pH meter with Quality Scientific Grade **HY-GEN pH Buffer 4** and **HY-GEN pH Buffer 7** Calibration Solutions. This will ensure that your meter is operating with accuracy and precision between pH 4 and 7. The ideal pH of a nutrient solution ranges typically between 5 and 7. A pH value above or below this range can increase the likelihood that some nutrients become unavailable to the plant. Typically, a pH value of 6.3 works well for most plants.

Use both **HY-GEN pH Buffer 4** and **HY-GEN pH Buffer 7** to ensure accurate readings between 4 and 7. Read the section under **HY-GEN pH Buffer 7** for more information about pH.

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pH Buffer 7

Solution for the calibration of pH meters

Keep your pH monitored on a daily basis. As plants grow and become larger, the demand for nutrients increases. This means the nutrient levels (conductivity) and pH in the solution can fluctuate and therefore should be tested and adjusted if necessary to maintain an optimum working nutrient solution. Nutrient requirements vary from plant to plant; therefore the ideal pH varies from plant to plant also. The pH is usually adjusted by adding an acid to lower the pH (**HY-GEN pH DOWN**) or alkali to increase the pH (**HY-GEN pH UP**). Remember to regularly calibrate your pH meter with Quality Scientific Grade **HY-GEN pH Buffer 4** and **HY-GEN pH Buffer 7** Calibration Solutions. For your convenience we have included a general growers guide on the reverse of this brochure.

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Conductivity

Solution for the calibration of Conductivity meters

To ensure accurate readings, it is essential to calibrate your Electrical Conductivity (EC) or TDS (Total Dissolved Solids) meter with Quality Scientific Grade **HY-GEN Conductivity** Calibration Solution regularly. The Electrical Conductivity (EC), measured as millisiemens (mS/cm^2), Conductivity Factor (cF) or parts per million (ppm) is the measurement of available nutrient in the solution. The conductivity increases as nutrient increases. Distilled or deionised water will give a near zero reading. As a general guide for hydroponics: $1mS/cm^2 = 10cF = 700ppm$.

Nutrient requirements vary from plant to plant; therefore the ideal conductivity varies from plant to plant also. For your convenience we have included a general growers guide on the reverse of this brochure.

ES

pH Electrode Storage

Solution for the storage of pH meters

Always keep pH electrodes stored in **HY-GEN pH Electrode Storage** solution. **HY-GEN pH Electrode Storage** solution is the same formula scientists use in laboratories to store glass pH electrodes. **pH Electrode Storage** solution maximises electrode performance and extends electrode life. pH Electrodes should never be stored dry. Buffers or distilled water are not suitable for storage of pH electrodes. Distilled water will cause ions to leach out of the glass bulb and render your electrode useless.

The electrodes can become coated in contaminates which build up over time. It is recommended that the electrodes be cleaned regularly with **HY-GEN Probe Cleaner** solution before calibrating your meter.

PC

Probe Cleaner

Solution for the cleaning of pH meters

It is recommended that the electrodes be cleaned regularly with **HY-GEN Probe Cleaner** solution. It is recommended that you clean your meter before calibrating or storing it. This will ensure that it operates with accuracy and precision once calibrated. Always keep your pH electrode stored in **HY-GEN pH Electrode Storage** solution when not in use.

pH electrodes may show slow response due to the build up of organic and inorganic contaminants which coat or clog them. Regular cleaning with **HY-GEN Probe Cleaner** solution can prolong the life of your meter and maximise electrode performance. **HY-GEN Probe Cleaner** solution can also be used to remove contaminants from Conductivity meter electrodes, making this product a worthwhile investment.

HY-GEN

Solutions Scientists Use

Quality Analytical Grade Solutions

HY-GEN Calibrations solutions are made according to international standards. The **pH Electrode Storage** and **Probe Cleaner** solutions are the same quality as those used in laboratories for the safe cleaning and storage of electronic meters. All Calibration and Care solutions are made using high Quality Analytical Grade constituents.

HY-GEN is the mark of guaranteed quality. All formulations and procedures have been prepared under careful supervision by our Qualified Chemist who has more than 20 years experience in Hydroponics, Analytical Chemistry, Environmental Chemistry and other fields such as Botany and Crops and Pasture Science.

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