

## Certified pH Buffer Solutions

An Overview of Certified pH Buffer Solutions from Paragon Scientific Ltd

### Why is pH an important measurement?

pH is the quantitative measurement of the hydrogen ion activity in a solution. Many processes and applications containing water will have a need for pH measurement, spanning across multiple industries. How acidic or alkaline a material is can be a vital parameter for many industrial processes and quality control limits.

In refinery and petrochemical processes, sour water corrosion is a common problem when processing crude. As the crude contains contaminants such as sulphur, salts and gases, when dissolved with water this can cause sour water which can lead to corrosion. Measuring the pH can help in the treatment of the corrosive sour water that is produced in the process.

In the food and beverage industry, pH is involved in the safety and preservation of foods, as well as its taste and flavour. Storage of foods, such as canned goods, need to have a low pH in order to prevent microbiological growth and spoilage.

pH also holds an important role within the agricultural industry. Plants and food produce, such as wheat, will grow best if the soil they inhabit is at an optimum pH. To attain high quality crops, farmers need to maintain ideal pH conditions in the soil of their fields, specific for each type of produce.

Wastewater will undergo treatment and processes to ensure that the pH is at an appropriate value before leaving manufacturing and purification plants, as set by local regulatory and environmental agencies. These are just a small set of examples highlighting how widely-important pH measurement is across multiple industries and the vital role it can play in everyday lives.

### Importance of Routine Maintenance

In order to achieve the best possible pH data, it is important that pH meters are calibrated on a routine basis. The frequency of calibration will depend on the type of application for which the pH data is required. Some applications require daily checks, whereas others may be weekly or monthly.

pH sensors or probes must be calibrated regularly to maintain measurement accuracy. It is almost impossible to obtain a perfectly functioning probe - even a new one - due to multiple factors that will affect its performance, such as manufacturing imperfections, natural degradation over time and use. Therefore, it is necessary to regularly calibrate the pH probe to adjust for any changes.

Ideally, end-users should use at least three different certified pH buffer solutions across the working range. Usually, it is pH 7 to set the offset voltage, and then two other standards either side to allow for the slope to be calculated. The most common are pH 4 and pH 10.



## What We Can Offer

Paragon Scientific have manufactured an introductory range of Certified pH Buffer Solutions, specifically used for verification and calibration checks of pH meter instruments. Routine maintenance and verification checks help ensure accurate readings of pH measurement instruments.

Our pH buffer range include solutions for pH 4.00, 7.00 and 10.00 certified at either 20 °C or 25 °C, and are accurate within  $\pm 0.01$  at 20 °C and within  $\pm 0.01$  at 25 °C.

Paragon Scientific's Certified pH Buffer solutions provide traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory (NPL) or other recognised national standards laboratories. pH values are traceable to National Institute Standards and Technology (NIST).

Each solution is supplied with a unique batch number, expiry date, and a temperature / pH table that provides nominal correlation data between pH values and temperature scale. The shelf life of each solution is 12 months. Full traceability and uncertainties are stated on the certificate with each solution.

Paragon Scientific's Certified pH buffer solutions are colour-coded to allow for easy identification of the pH required, and include anti-fungal preservatives / mould inhibitors.

These solutions are sold in 500 mL volume tamper evident, HDPE containers. For other volume sizes, please contact the sales team to discuss further.

- Certified solutions for either 20 °C or 25 °C
- Certified pH Buffer Solutions are fully traceable to NIST and international protocols
- Sold as colour-coded solutions for easy-identification purposes
- Sold with anti-fungal preservatives / mould inhibitors
- Supplied with certificate, Safety Data Sheet (SDS) and correlation table between pH and temperature
- Supplied in 500 mL, tamper-evident containers. For other volumes, please contact us direct.
- 12 month shelf life per solution

Product Code	Description
<b>PH4-20CF</b>	Certified pH Buffer Solution, pH 4 at 20 °C, Coloured (Red), with Fungicide, 500 mL
<b>PH4-25CF</b>	Certified pH Buffer Solution, pH 4 at 25 °C, Coloured (Red), with Fungicide, 500 mL
<b>PH7-20CF</b>	Certified pH Buffer Solution, pH 7 at 20 °C, Coloured (Yellow), with Fungicide, 500 mL
<b>PH7-25CF</b>	Certified pH Buffer Solution, pH 7 at 25 °C, Coloured (Yellow), with Fungicide, 500 mL
<b>PH10-20CF</b>	Certified pH Buffer Solution, pH 10 at 20 °C, Coloured (Blue), with Fungicide, 500 mL
<b>PH10-25CF</b>	Certified pH Buffer Solution, pH 10 at 25 °C, Coloured (Blue), with Fungicide, 500 mL

## Why choose Paragon?

All of Paragon's products have been manufactured to the highest certified integrity and premium quality on a global level. Every certificate provides low levels of uncertainty of measurement and is fully traceable to international methodology. With an excellent reputation across multiple industries, Paragon provides excellent customer service, technical support and prompt delivery to all its customers.

Paragon Scientific has always sought to certify its products to the highest metrological level it can achieve, this has been one of its key objectives since the company was founded and has set them apart from other reference material producers.

Integrity and Quality has and always will be at the forefront for Paragon Scientific, which is evidenced by their accreditations to ISO 17025 and ISO Guide 34 under UKAS and the long-standing relationships with end-users and the worldwide partners they work with. Integrity and Quality are embedded across all their business activities and provides the framework in how they approach new ideas and operate.

**For further information, please feel free to contact our team at [sales@paragon-sci.com](mailto:sales@paragon-sci.com) or contact your local representative.**