

ELECTROCHEMISTRY STANDARDS

The selection and correct use of chemical standards plays a fundamental role in the quality of any chemical measurement. To enable analysts to achieve the required quality of measurement and confidence in their results, Reagecon has developed a range of electrochemistry standards that meets all of their quality requirements:

- **Accuracy** – Reagecon offer pH buffers with a specification of ± 0.01 pH units and conductivity standards with a specification of $\pm 1\%$, making them suitable for even the most demanding applications.
- **Traceability** – Analysts can only make valid comparisons of measurements by using standards that are directly linked to a common reference point, usually SI units. Reagecon's electrochemistry standards are directly traceable to NIST Primary Standards, enabling their users to produce measurements that can be universally accepted, regardless of the time and place of the test.
- **Comprehensive Certificates of Analysis (CoAs)** that fully meet all of the requirements of good laboratory practice. Besides batch details, product specification and assay information, Reagecon's CoAs include details of traceability, test method and uncertainty of measurement. All of these CoAs and Material Safety Data Sheets are available on Reagecon's website – www.reagecon.com



It is important to note that NIST do not police claims of traceability to their Primary Standards – any manufacturer can claim “traceable to NIST”. Reagecon are accredited to ISO 17025 for our key electrochemistry test methods. This accreditation gives an independent guarantee of our claims of traceability and also requires us to demonstrate our technical competence and validate our test methods.

Analysts require more from their standards than high quality – they must also be easy to use and be of appropriate values for their range of applications. Reagecon have carefully designed their comprehensive range of standards to meet these requirements:

- **Proven Stability** – Reagecon thoroughly test their packaging bottles to ensure that they do not have a detrimental effect on their contents. This means that users of Reagecon's standards can be confident that these standards will remain within Reagecon's published specifications for their entire shelf life.
- **Extensive range of values.** Reagecon manufacture electrochemistry standards of values that can be used for instrument calibration and also for use as Control Standards. Obtaining an acceptable reading for a Control Standard that is of similar value to the test samples is the principal means by which analysts can attain proof of the correct test result.
- **Fully characterised temperature profiles.** The values of electrochemistry standards are temperature dependent. Reagecon's standards are labelled with full details of their variation with temperature. This allows analysts to make use of these standards across a broad temperature range, making them ideal for both laboratory and field use.

Reagecon provide the quality and range of electrochemistry standards to enable their users to achieve accurate analysis and confidence in their test results.



pH BUFFERS

Reagecon manufacture the most comprehensive range of pH buffers available on the market covering all of the following user requirements:

- **Calibration Buffers for all Instruments.** Modern pH meters have an Automatic Buffer Recognition function that accounts for the temperature variation of their calibration buffers. However, different brands of pH meters are programmed with a variety of types of pH buffers, each having different temperature profiles. Using the wrong type of buffer for calibrating your instrument will lead to inaccurate sample results. Reagecon manufacture all of the types of buffers used in current pH meters and are able to advise on the correct buffers to use for your meter.
- **Control Standards for all Applications.** Reagecon's pH buffers cover the pH range from pH1.00 to pH13.00. This allows analysts to use Reagecon's buffers as Control Standards to verify the validity of their pH measurements for all applications.
- **Extended Shelf Life.** Reagecon's pH buffers have a shelf life of at least 2 years from date of manufacture. These shelf lives have been established as a result of the extensive stability trials conducted by Reagecon on part-full bottles of buffers, replicating actual user conditions.
- **Innovative Packaging.** As well as offering pH buffers in plain bottles, Reagecon also offer bag-in-box containers for high volume users and twin-neck bottles for field calibration. Twin-neck bottles eliminate the need for a beaker during calibration.

Professional Range

These buffer standards are suitable for use when very accurate measurements are required. They are manufactured according to the requirements of NIST (values specified at 20°C) and DIN 19266 (values specified at 25°C). All of Reagecon's Professional range of pH buffers have a specification of ± 0.01 pH units.

DIN Professional Range - Ordering Information

Cat No.	Description	Pack Size
101679	Buffer Standard 1.679 @ 25°C	500ml
103776	Buffer Standard 3.776 @ 25°C	500ml
104005	Buffer Standard 4.005 @ 25°C	500ml
10687	Buffer Standard 6.865 @ 25°C	500ml
107413	Buffer Standard 7.413 @ 25°C	500ml
109180	Buffer Standard 9.180 @ 25°C	500ml
110012	Buffer Standard 10.012 @ 25°C	500ml
112454	Buffer Standard 12.454 @ 25°C	500ml

N.I.S.T Professional Range - Ordering Information

Cat No.	Description	Pack Size
101675	Buffer Standard 1.675 @ 20°C	500ml
101677	Buffer Standard 1.677 @ 20°C	500ml
103788	Buffer Standard 3.788 @ 20°C	500ml
104001	Buffer Standard 4.001 @ 20°C	500ml
106881	Buffer Standard 6.881 @ 20°C	500ml
107429	Buffer Standard 7.429 @ 20°C	500ml
109225	Buffer Standard 9.225 @ 20°C	500ml
110062	Buffer Standard 10.062 @ 20°C	500ml
112627	Buffer Standard 12.627 @ 20°C	500ml



pH Buffer Solutions

Reagecon's two ranges of pH buffers with their values certified at 20°C and 25°C can be used to maximise confidence in pH measurements. As well as being ideal for use as calibration standards, they also cover values that can be used as control standards for all pH applications.

pH Buffers - 20°C - Ordering Information

Cat No.	Description	Spec.	Pack Size
10105 1010 5010	Buffer Solution pH1.00	±0.02	500ml 1L 5L
10205 1020 5020	Buffer Solution pH2.00	±0.02	500ml 1L 5L
10305 1030 5030	Buffer Solution pH3.00	±0.02	500ml 1L 5L
10405 1040 5040	Buffer Solution pH4.00	±0.01	500ml 1L 5L
CC10405 CC1040 CC5040	Buffer Solution pH4.00 (Phthalate Free)	±0.01	500ml 1L 5L
10505 1050 5050	Buffer Solution pH5.00	±0.01	500ml 1L 5L
10605 1060 5060	Buffer Solution pH6.00	±0.01	500ml 1L 5L
10685 1068 5068	Buffer Solution pH6.80	±0.01	500ml 1L 5L
10705 1070 5070	Buffer Solution pH7.00	±0.01	500ml 1L 5L
10805 1080 5080	Buffer Solution pH8.00	±0.01	500ml 1L 5L
10905 1090 5090	Buffer Solution pH9.00	±0.01	500ml 1L 5L
11005 1100 5100	Buffer Solution pH10.00	±0.01	500ml 1L 5L
11105 1110 5110	Buffer Solution pH11.00	±0.05	500ml 1L 5L
11205 1120 5120	Buffer Solution pH12.00	±0.05	500ml 1L 5L
11305 1130 5130	Buffer Solution pH13.00	±0.05	500ml 1L 5L

pH Buffers - 25°C - Ordering Information

Cat No.	Description	Spec.	Pack Size
1010525 101025 501025	Buffer Solution pH1.00	±0.02	500ml 1L 5L
1020525 102025 502025	Buffer Solution pH2.00	±0.02	500ml 1L 5L
1030525 103025 503025	Buffer Solution pH3.00	±0.02	500ml 1L 5L
1040525 104025 504025	Buffer Solution pH4.00	±0.01	500ml 1L 5L
CC1040525 CC104025 CC504025	Buffer Solution pH4.00 (Phthalate Free)	±0.01	500ml 1L 5L
1050525 105025 505025	Buffer Solution pH5.00	±0.01	500ml 1L 5L
1060525 106025 506025	Buffer Solution pH6.00	±0.01	500ml 1L 5L
1068525 106825 506825	Buffer Solution pH6.80	±0.01	500ml 1L 5L
1070525 107025 507025	Buffer Solution pH7.00	±0.01	500ml 1L 5L
1080525 108025 508025	Buffer Solution pH8.00	±0.01	500ml 1L 5L
1090525 109025 509025	Buffer Solution pH9.00	±0.01	500ml 1L 5L
1100525 110025 510025	Buffer Solution pH10.00	±0.01	500ml 1L 5L
1110525 111025 511025	Buffer Solution pH11.00	±0.05	500ml 1L 5L
1120525 112025 512025	Buffer Solution pH12.00	±0.05	500ml 1L 5L
1130525 113025 513025	Buffer Solution pH13.00	±0.05	500ml 1L 5L

pH BUFFER SOLUTIONS

Colour Coded Buffers

Ideal for calibration / Easily distinguished

Reagecon's colour-coded buffers are available in pH values included in all common pH meters automatic calibration procedures.

Coloured Coded Buffers - Ordering Information

Cat No.	Description	Temp.	Pack Size
10405C 1040C 5040C	Buffer Solution pH4.00 (Red)	20°C	500ml 1L 5L
10705C 1070C 5070C	Buffer Solution pH7.00 (Yellow)	20°C	500ml 1L 5L
11005C 1100C 5100C	Buffer Solution pH10.00 (Blue)	20°C	500ml 1L 5L
1040525C 104025C 504025C	Buffer Solution pH4.00 (Red)	25°C	500ml 1L 5L
1070525C 107025C 507025C	Buffer Solution pH7.00 (Yellow)	25°C	500ml 1L 5L
1100525C 110025C 510025C	Buffer Solution pH10.00 (Blue)	25°C	500ml 1L 5L



Twin Neck Bottles - Ideal for Field Use

These innovative bottles have a dispensing chamber that can be used as a calibration vessel, making them ideal for field work:

- No need for a separate container for electrode calibration.
- No buffer wasted - suitable quantity of buffer is delivered into the dispensing chamber.
- No possibility of contamination.
- Easy to carry.
- Colour-coded for easy identification.
- Available in pH values included in all common pH meters automatic calibration procedures.
- High specification (± 0.01 pH) - ensures accurate calibration.



Twin Neck Bottle - Ordering Information

Cat No.	Description	Temp.	Pack Size
10402CTT 10405CTT 1040CTT	Buffer Solution pH4.00 (Red)	20°C	250ml 500ml 1L
10702CCT 10705CTT 1070CTT	Buffer Solution pH7.00 (Yellow)	20°C	250ml 500ml 1L
11002CTT 11005CTT 1100CTT	Buffer Solution pH10.00 (Blue)	20°C	250ml 500ml 1L
1040225CT 1040525CT 104025CT	Buffer Solution pH4.00 (Red)	25°C	250ml 500ml 1L
1070225CT 1070525CT 107025CT	Buffer Solution pH7.00 (Yellow)	25°C	250ml 500ml 1L
1100225CT 1100525CT 110025CT	Buffer Solution pH10.00 (Blue)	25°C	250ml 500ml 1L

Conductivity Standards

Conductivity is a vital test parameter for diverse applications across a huge measurement range, including:

- Environmental monitoring of river water, ground water, fisheries and drinking water
- Purified water testing for laboratory purifications systems, power generation and semiconductor, pharmaceutical and chemical manufacture
- Concentration measurements in a diverse range of chemical processes
- Food & beverage raw materials and in-process testing
- Monitoring Cleaning in Process (CIP) in food production

Reagecon is the world's leading manufacturer of conductivity standards providing conductivity standards at 24 different values from 1.3 - 500,000 $\mu\text{S}/\text{cm}$. This means that suitable Calibration and Control standards are available for all conductivity applications. In addition to being of suitable values for all applications, Reagecon's conductivity standards also provide the following benefits:

- **Accurate Analysis.** All of Reagecon's conductivity standards have a specification of $\pm 1\%$, except our 1.3 $\mu\text{S}/\text{cm}$, which has a specification of 1.25 - 1.35 $\mu\text{S}/\text{cm}$.
- **Guaranteed Stability.** Reagecon offers the lowest, aqueous conductivity standards in the world. We have applied the innovative manufacturing process for these low standards across our full range of conductivity standards to give unrivalled stability. Reagecon is able to guarantee the stability of their conductivity standards even after the bottle has been opened.
- **Fully Characterised Temperature Profiles.** The values of electrochemistry standards are temperature dependent. Reagecon's standards are labelled with full details of their variation with temperature. This allows these standards to be used across a broad temperature range, making them ideal for both laboratory and field use.
- **No Matrix Errors.** All of Reagecon's conductivity standards are aqueous-based. This means that they do not cause the matrix-mismatch errors that can be associated with non-aqueous conductivity standards.
- **Non-hazardous.** Due to their aqueous composition, Reagecon conductivity standards do not present any shipping, storage, handling or disposal problems associated with solvent-based conductivity standards.

Premium Values - Ordering Information

Cat No.	Description	Temp.	Pack Size
CSKC136	1.3 Microsiemens/cm	25°C	6 x 250ml
CSKC13	1.3 Microsiemens/cm	25°C	250ml
CSKC5	5 Microsiemens/cm	25°C	500ml
CSKC10	10 Microsiemens/cm	25°C	500ml
CSKC20	20 Microsiemens/cm	25°C	500ml
CSKC50	50 Microsiemens/cm	25°C	500ml
CSKC100	100 Microsiemens/cm	25°C	500ml
CSKC200	200 Microsiemens/cm	25°C	500ml
CSKC500	500 Microsiemens/cm	25°C	500ml
CSKC1000	1,000 Microsiemens/cm	25°C	500ml
CSKC5M	5,000 Microsiemens/cm	25°C	500ml
CSKC10M	10,000 Microsiemens/cm	25°C	500ml
CSKC20M	20,000 Microsiemens/cm	25°C	500ml
CSKC50M	50,000 Microsiemens/cm	25°C	500ml
CSKC100M	100,000 Microsiemens/cm	25°C	500ml
CSKC150M	150,000 Microsiemens/cm	25°C	500ml
CSKC200M	200,000 Microsiemens/cm	25°C	500ml
CSKC300M	300,000 Microsiemens/cm	25°C	500ml
CSKC350M	350,000 Microsiemens/cm	25°C	500ml
CSKC450M	450,000 Microsiemens/cm	25°C	500ml
CSKC500M	500,000 Microsiemens/cm	25°C	500ml

Standard Values - Ordering Information

Cat No.	Description	Temp.	Pack Size
CSKC84	84 Microsiemens/cm	25°C	500ml
CSKCS	147 Microsiemens/cm	25°C	500ml
CSKCL	1,413 Microsiemens/cm	25°C	500ml
CSKC12880	12,880 Microsiemens/cm	25°C	500ml

TDS Standard - Ordering Information

Cat No.	Description	Temp.	Pack Size
CS1382	1382 ppm NaCl	25°C	500ml



ELECTRODE CARE AND MAINTENANCE

The accuracy and reliability of your electrochemical measurements can be improved through routine care and maintenance of your sensors. As well as ensuring the quality of your measurements, this will also improve the working life of your sensors. Reagecon offer a comprehensive range of electrode care and maintenance products tailored to meet these needs:

pH Electrode Care & Maintenance - Ordering Information

Cat No.	Description	Pack Size
EFS3	Electrode Filling Solution - 3M Potassium Chloride, free from Silver ion (suitable for all Blueline electrodes)	100ml
EFS35	As Above	500ml
ESS5	pH Electrode Storage Solution	500ml
ESS01	As Above	1L
ECS	Electrode Cleaning Solution for the removal of proteins (Pepsin / hydrochloric acid)	500ml
IECS5	Inorganic Electrode Cleaning Solution for removal of sulphide (Thiourea / hydrochloric acid)	500ml
OECS	Organic Electrode Cleaning Solution	500ml

Dissolved Oxygen Sensor Care & Maintenance - Ordering Information

Cat No.	Description	Pack Size
NAS051	Dissolved Oxygen Zero Calibration Solution	1L
285126606	Electrolyte for all Oxygen sensors	50ml
285126614	Cleaning solution for all Oxygen sensors	50ml
285126639	Spare membrane modules for 9009 & LFOx 1400 Oxygen sensors	pack of 3
285126655	9009 & LFOx 1400 Dissolved Oxygen sensor maintenance kit - electrolyte, cleaning solution, membranes & cleaning foils	kit
285126651	Ox 1400 Stir Dissolved Oxygen sensor maintenance kit - electrolyte, cleaning solution, membranes & cleaning foils	kit

Detailed information on the care and maintenance of sensors is available at www.reagecon.com. This includes comprehensive technical papers, such as "Care, Maintenance and Fault Diagnosis for pH Electrodes"

