



Conductivity^{μS} Standards

A range of standards designed to optimise the confidence of analysts in their results.



Reagecon

Reagecon Conductivity Standards

The changing requirements and the increasing demands being placed on analysts have been more onerous in recent years than at any other time in the history of analytical science. Analysts measuring conductivity must meet demands for increased accuracy and for measurement of more varied and challenging sample types whilst also providing greater speed, efficiency and cost effectiveness for their analysis.

Compliance with this changing situation can be achieved through strict adherence to Good Laboratory Practice (GLP). High quality instrumentation, Validation, Calibration and Service coupled with Training, Method Validation and the use of High Quality Standards and Control Materials are all major aspects of Good Laboratory Practice. Conductivity measurement is one of the key parameters for which Reagecon offer a comprehensive, turnkey solution to meet all of these GLP requirements.

At the heart of Reagecon's approach to conductivity measurement is our comprehensive range of **Conductivity Standards**. The products are tested using our ISO 17025 accredited methods and are fully characterised and certified for Accuracy, Measurement Uncertainty, Stability and Traceability. Not only do such Standards accommodate the technical requirements of a high quality analytical result, but they also provide the other major demands of modern analytical chemistry i.e. proof that the result is correct and fit for purpose.



Above image:

- CSKC136** 1.30 microsiemens/cm at 25°C
- CSKCL** 1413 microsiemens/cm at 25°C
- CSKC5M** 5000 microsiemens/cm at 25°C

EXTENSIVE RANGE OF VALUES

Reagecon offer 27 different values of conductivity standards, ranging from as low as 1.3µS/cm to as high as 500,000µS/cm. This range ensures that users can secure a suitable conductivity standard irrespective of their application.

- ✓ Reagecon's Standard Value range of conductivity standards cover the entire range of calibration values pre-programmed into modern conductivity meters.
- ✓ Reagecon's Premium Value range of conductivity standards offers the user the widest available range of conductivity control standards.

Delivering The Correct Result...

MATRIX MATCHED

The matrix of a solution is defined as “the components of the sample other than the analyte”. In all analytical measurements, it is of utmost importance that the matrix of the standard and the sample are the same. As conductivity measurement is, in the main, a water quality measurement, the standard used should also have an aqueous matrix. Reagecon’s conductivity standards are all aqueous based, thereby eliminating any errors attributed to matrix mismatch.

NON-HAZARDOUS

All of Reagecon’s conductivity standards are aqueous and therefore they are non-hazardous. This means that Reagecon’s conductivity standards offer the following benefits over solvent-based conductivity standards

- Ease and cost of shipping, without the need to provide hazardous goods’ paperwork
- Reduced Health & Safety requirements for storage and use
- Ease and cost of disposal – solvent-based conductivity standards require expensive, specialised disposal to comply with environmental regulations

GUARANTEED STABILITY

As a result of the extensive Research and Development in our innovative manufacturing process, Reagecon can guarantee the stability of their complete range of conductivity standards over their entire shelf life. The stability offered by Reagecon’s conductivity standards varies from that of their competitors in one vital area. *Reagecon can guarantee that their conductivity standards will remain within specification, (up to their expiry date), right through their working life, regardless of when the bottle was first opened.* This eliminates the need to open a fresh bottle for every measurement thereby reducing both purchasing and disposal costs. The shelf life of Reagecon’s conductivity standards from their date of manufacture is given below. Reagecon’s 1.30µS/cm conductivity standard is packaged in single-dose bottles and so no guarantee can be given on the multiple use of this standard.

Conductivity Value (µS/cm)	Shelf Life
1.30	3 months
5 & 10	6 months
20 - 147	12 months
200 – 500,000	18 months

ACCURACY

All standards have a specification of $\pm 1\%$, except Reagecon’s 1.30µS/cm, which has a specification of 1.25 – 1.35µS/cm. This high level of accuracy enables the standards to be used as calibrators and/or controls in fulfilment of the most exacting industrial statutory requirements, for example the United States Pharmacopoeia monograph for Water For Injection.

ACCREDITATION

Reagecon’s conductivity measurement has been covered in the scope of our accreditation to ISO 17025 “General Requirements for Calibration and Testing Laboratories” and its predecessor, EN 45001, since 1990. In the case of our range of conductivity standards, over 90% of values are accredited to ISO 17025. Achieving accreditation involves fulfilling many highly technical criteria, including fully validating our test methods and instrumentation systems and characterising our measurement uncertainty. Reagecon’s accreditation proves the technical competence of our personnel, the technical validity of our test procedures and the traceability of our measurements. Therefore, in purchasing a conductivity standard from Reagecon, not only do you have transparent traceability to primary standards, but you also have confidence that the standards are of a well-defined and tightly controlled specification.

Delivering The Correct Result...

ALL VALUES ARE CERTIFIED AND TRACEABLE

Comprehensive Certificates of Analysis are available for all of Reagecon's conductivity standards, including detailed information on:

- Date of measurement
- Test method used
- Result achieved
- Lot number
- Expiry date
- Uncertainty of Measurement and Traceability Data

The complete range is traceable to primary standards from the United States National Institute for Standards and Technology (NIST). It is important to note that claims of traceability are not verified by NIST – any standards' manufacturer can make such a claim. The traceability of these standards is proven by the inclusion of conductivity testing in Reagecon's ISO 17025 accreditation. It is a fundamental requirement of ISO 17025 that traceability is proven.

CHARACTERISED TEMPERATURE COEFFICIENT OF VARIATION

The temperature coefficient of variation and a table of conductivity variation with temperature are printed on the label of each bottle of conductivity standard. This feature provides the user with all the information necessary to use Reagecon's conductivity standards across the full range of measurement temperatures encountered for their application.

UNPARALLELED TECHNICAL SUPPORT

Reagecon have been manufacturing conductivity standards for over 16 years. In that time, we have built up a vast resource of technical expertise on all aspects of conductivity measurement. The members of Reagecon's Technical Services Department have written a comprehensive series of papers covering all of the practical requirements for accurate conductivity measurement. These papers and the Reagecon book, "A Practical Guide to Accurate Conductivity Measurement" are available via Reagecon's website - www.reagecon.com. Our Technical Services team is always on hand to answer any questions regarding the selection and use of conductivity instruments, sensors and standards.

CONDUCTIVITY STANDARDS FOR PHARMACEUTICAL APPLICATIONS

The measurement of conductivity of Water for Injection (WFI) and purified water are of fundamental importance to the quality of many pharmaceutical products. Compliance with the regulatory requirements set out in USP & EP requires the use of high quality conductivity standards. Reagecon have developed a series of conductivity standards that are designed specifically to meet these requirements. This range includes conductivity standards formulated in accordance with the current European Pharmacopoeia specifications, along with Reagecon's 1.30 $\mu\text{S}/\text{cm}$ conductivity standard, which is ideal for use as a Control Standard for these demanding applications.



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Chemical Measurement Specialists

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Ordering Information

Conductivity Standard Values		
Product Number	Conductivity @ 25°C	Pack Size
CSKC84	84 µS/cm	500ml
CSKCS	147 µS/cm	500ml
CSKCL	1413 µS/cm	500ml
CSKC12880	12,880 µS/cm	500ml

Conductivity Premium Values		
Product Number	Conductivity @ 25°C	Pack Size
CSKC13	1.30 µS/cm	1x250ml
CSKC136	1.30 µS/cm	6x250ml
CSKC5	5 µS/cm	500ml
CSKC10	10 µS/cm	500ml
CSKC20	20 µS/cm	500ml
CSKC50	50 µS/cm	500ml
CSKC100	100 µS/cm	500ml
CSKC200	200 µS/cm	500ml
CSKC500	500 µS/cm	500ml
CSKC1000	1,000 µS/cm	500ml
CSKC5M	5,000 µS/cm	500ml
CSKC10M	10,000 µS/cm	500ml
CSKC20M	20,000 µS/cm	500ml
CSKC50M	50,000 µS/cm	500ml
CSKC100M	100,000 µS/cm	500ml
CSKC150M	150,000 µS/cm	500ml
CSKC200M	200,000 µS/cm	500ml
CSKC300M	300,000 µS/cm	500ml
CSKC350M	350,000 µS/cm	500ml
CSKC450M	450,000 µS/cm	500ml
CSKC500M	500,000 µS/cm	500ml

European Pharmacopoeia Reagents		
Product Number	Conductivity @ 20°C	Pack Size
EPI330	1330µS/cm	500ml
EPI33	133 µS/cm	500ml
EP266	26.6 µS/cm	500ml

TDS Standard		
Product Number	Concentration	Pack Size
CSI382	1382 ppm NaCl	500ml

Delivering The Correct Result...

Proof of the Correct Result and Regulatory Compliance

Reagecon's ISO 17025 accreditation combined with the proven stability of our range of conductivity standards means that users of Reagecon's conductivity standards can fully comply with GMP, GLP, USP, EP, ISO 17025 & ISO 9000 requirements for their own conductivity measurements. They can also achieve full traceability, improve their measurement accuracy and characterise the uncertainty of measurement of their own conductivity measurements.

Reagecon's wide range of values of conductivity standards means that relevant control standards are available for all conductivity measurement applications, thus allowing users to validate their measurement systems and methods. This means that users of Reagecon's conductivity standards can not only achieve the correct conductivity test result; but they can also prove that their test results are correct.



Delivering The Correct Result...

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Chemical Measurement Specialists

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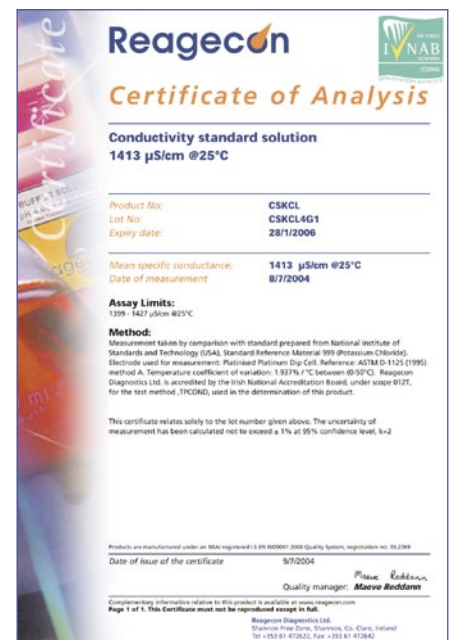
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REG. NO. 19.2769



Certificate of Analysis to Ensure Regulatory Compliance

- Actual Conductivity
- Lot Number
- Product Description
- Test Date
- Specified Test Method
- Standard Reference Material Detail
- Specified Accuracy