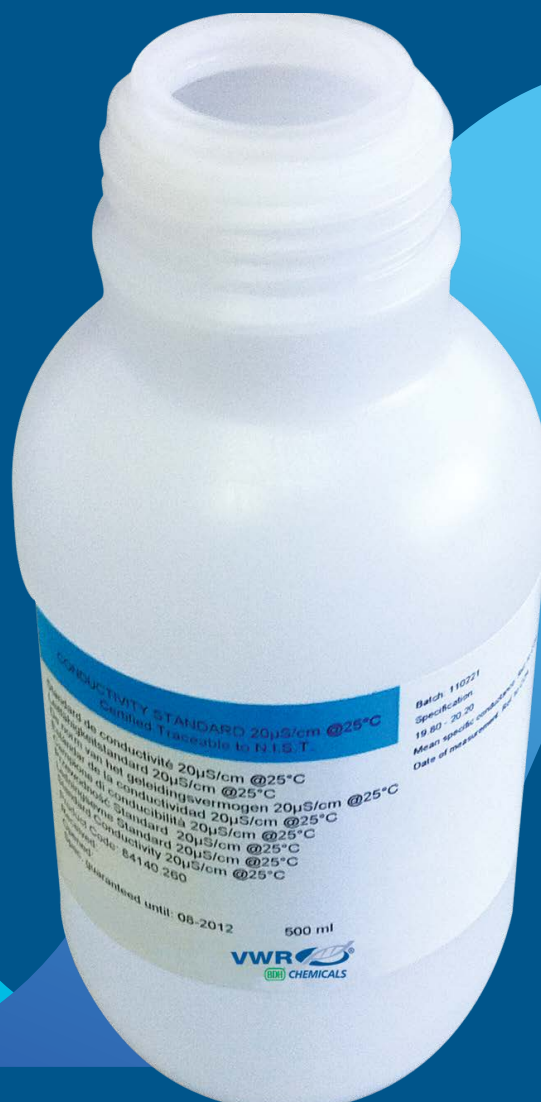


VWR® conductivity measurement made easy

01. CONDUCTIVITY STANDARDS
STANDARD & PREMIUM VALUES

02. CONDUCTIVITY STANDARDS
CERTIFIED REFERENCE MATERIALS

03. CONDUCTIVITY METERS



VWR® CHEMICALS CONDUCTIVITY STANDARDS

A NEW EXTENDED RANGE

When testing for conductivity, all laboratories want to be sure that the results obtained are accurate. VWR® Chemicals can help by offering a complete range of certified control standards. A new range of control values available from 1.3 to 500,000 µS/cm meet all the requirements for electrochemical analysis.

VWR Chemicals offers conductivity standards from the leading producer worldwide who is able to manufacture and stabilize these products at such low levels of conductivity.

Standard values used for determining cell constant (selection determined by cell design specified by instrument manufacturer).

Premium values used for verifying that the measuring system (instrument, probe and operator) can accurately detect sample values in the area of interest (e.g. 15 µS/cm for pharmaceutical water, or 100,000 µS/cm for environmental samples).

Accuracy

Accurate to ±1%.

Control standards

Critical for any customers operating Good Laboratory Practice (GLP). Control standards give assurance in the measuring system, the results generated, and the actions taken based on these results.

Quality production

All standards are tested using INAB accredited test methods to ISO 17025.

Traceability

All directly traceable to NIST meeting Eur. Ph. and US Ph. requirements.



CONDUCTIVITY STANDARD SOLUTIONS

Standard values (25 °C)

Description	Pk (ml)	Cat. No.
Standard values (25 °C) - (µS/cm)		
84	100	84131.180
84	500	84131.260
147	500	84132.260
1413	100	84135.180
1413	500	84135.260
1413	1000	84135.290
12880	100	84136.180
12880	500	84136.260
12880	1000	84136.290

Premium values (25 °C)

Description	Pk (ml)	Cat. No.
Premium values (25 °C) - (µS/cm)		
1.3	500	84134.260
5	500	84133.260
10	500	84137.260
15	500	84107.260
20	500	84140.260
50	500	84143.260
100	500	84139.260
200	500	84145.260
500	500	84138.260
1000	500	84141.260
10000	500	84146.260
111800	500	84108.260
20000	500	84149.260
50000	500	84142.260
100000	500	84144.260
150000	500	85917.260
200000	500	85918.260
500000	500	85919.260



Conductivity standards, Certified Reference Materials.

CONDUCTIVITY STANDARDS, CERTIFIED REFERENCE MATERIALS (CRMs) FOR PRIMARY CALIBRATION OF CONDUCTIVITY METERS

Avantor offers a comprehensive range of conductivity standards as Certified Reference Materials with primary use calibration of conductivity meters.

- Accredited acc. ISO 17025 / ISO 7034
- Traceable to NIST
- Certificate of Analysis including temperature correction chart

Intended uses:

- Calibration, qualification and monitoring of instruments for conductivity measurement
- Validation of analytical methods
- Preparation of working reference samples
- Detection limit and linearity studies

These standards are produced by dissolving potassium chloride (KCl) in 18 MOhm of deionised water, except where indicated, then filtered through a 0,22 µm filter in equilibrium with atmospheric carbon dioxide. The certified value and expanded uncertainty are obtained using conductivity meter calibration according to ISO/IEC 17025. Homogeneity and stability studies are performed according to the requirement of ISO 17034 and ISO Guide 35. All conductivity standards are traceable to SI (NIST).

Description	Conductivity [25 °C]	Pack type	Pk	Cat. No.
Conductivity standard CRM / Conductivity water	0 - 2 µS/cm (nominal)	PB	250 ml	89001.230
Conductivity standard CRM in 30% n-Propanol	5 µS/cm	PB	500 ml	89002.270
Conductivity standard CRM in 30% n-Propanol	10 µS/cm	PB	500 ml	89003.270
Conductivity standard CRM in 30% n-Propanol	15 µS/cm	PB	500 ml	89005.270
Conductivity standard CRM	20 µS/cm	PB	500 ml	89006.270
Conductivity standard CRM	25 µS/cm	PB	500 ml	89007.270
Conductivity standard CRM	50 µS/cm	PB	500 ml	89008.270
Conductivity standard CRM	84 µS/cm	PB	500 ml	89009.270
Conductivity standard CRM	100 µS/cm	PB	500 ml	89010.270
Conductivity standard CRM	147 µS/cm	PB	500 ml	89011.270
Conductivity standard CRM	200 µS/cm	PB	500 ml	89012.270
Conductivity standard CRM	500 µS/cm	PB	500 ml	89013.270
Conductivity standard CRM	718 µS/cm	PB	500 ml	89014.270
Conductivity standard CRM	1000 µS/cm	PB	500 ml	89015.270

Description	Conductivity [25 °C]	Pack type	Pk	Cat. No.
Conductivity standard CRM	1.41 mS/cm	PB	100 ml	83607.180
Conductivity standard CRM	1.41 mS/cm	PB	500 ml	83607.260
Conductivity standard CRM	1.41 mS/cm	PB	1,000 ml	83607.290
Conductivity standard CRM	1500 µS/cm	PB	500 ml	89019.270
Conductivity standard CRM	2000 µS/cm	PB	500 ml	89020.270
Conductivity standard CRM	3000 µS/cm	PB	500 ml	89021.270
Conductivity standard CRM	5000 µS/cm	PB	500 ml	85645.260
Conductivity standard CRM	10000 µS/cm	PB	500 ml	89023.270
Conductivity standard CRM	12.88 mS/cm	PB	500 ml	83608.260
Conductivity standard CRM	12.88 mS/cm	PB	1000 ml	83608.290
Conductivity standard CRM	15000 µS/cm	PB	500 ml	89026.270
Conductivity standard CRM	20000 µS/cm	PB	500 ml	89027.270
Conductivity standard CRM	30000 µS/cm	PB	500 ml	89028.270
Conductivity standard CRM	50000 µS/cm	PB	500 ml	89029.270
Conductivity standard CRM	100000 µS/cm	PB	500 ml	89030.270
Conductivity standard CRM	111.3 mS/cm	PB	500 ml	89031.270

*PB-Plastic bottle



VWR® CO-330, PORTABLE TDS METER, CONDUCTIVITY/SALINITY

This economical meter can simultaneously measure conductivity, specific conductance, salinity, TDS (Total Dissolved Solids) and temperature. Waterproof housing (IP 66) enables work in difficult conditions.

- Color, graphic touch screen enables simultaneous read out
- Six sub ranges switched automatically (auto range)
- Measures salinity with conversion to NaCl and KCl
- TDS measurement, constant coefficient 0,5; automatic temperature compensation
- Constant a coefficient (the temperature compensation coefficient) –2%/°C
- The reference temperature may be chosen between 25 or 20 °C
- Memory of 200 results with time and date; calibration time reminding; powered by rechargeable batteries or power adapter

It converts conductivity into salinity according to real characteristics and not a constant coefficient. Measures conductivity in liquids with conductivity up to 1000 mS/cm. 1-point calibration by entering the constant K of the cell or by determining it with use of a standard solution. The standard set includes: CO-330 conductivity/salinity meter, conductivity cell with temperature probe, 12,90 mS/cm conductivity controlling solution (50 ml), plastic case and 5V/1000 mA power adapter.



CONDUCTIVITY/TDS/°C METER, BENCH, PHENOMENAL® CO 3100L VWR®, PART OF AVANTOR

This user friendly instrument, with articulated electrode stand and IP 43-rated housing, provides high resolution and accuracy for precise measurements.

Complete with USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight showing both conductivity/TDS and temperature values simultaneously
- Data logging function selectable between 1 min and 1 h; memory capacity of 5000 data sets
- Automatic power shut off: Adjustable from 10 min to 24 h
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when re-calibration is required
- Low energy consumption. Choice of mains supply or 4x 'AA' batteries for over 1000 operating hours

Ready-to-use to use conductivity CO 3100 L kit includes instrument, conductivity probe CO 11 with built-in temperature sensor, 1,5 m cable and articulated stand, conductivity standard and plastic beaker.

Conductivity probes for low conductivities are available on request. Please contact your local VWR sales office for further information.

Model	CO 3100 L
Conductivity range	0,001 µS/cm - 1000 mS/cm
Conductivity resolution	Up to 0,001 µS/cm (depending on probe)
Conductivity accuracy	±0,5% of measured value
Conductivity cell constant	0,001 - 25 (depending on probe)
Conductivity calibration	1 point
Resistivity range	1,000 Ω/cm - 999,9 MΩ/cm
Resistivity resolution	0,001 Ω/cm - 0,1 MΩ/cm
Resistivity accuracy	±0,5% of measured value
Salinity range	0,00 - 70 ppt
TDS range	0 - 1999 mg/L / 2,00 - 19,99 g/L / 20,0 - 199,9 g/L
TDS resolution	1 mg/L / 0,01 g/L / 0,1 g/L
TDS accuracy	±0,5% of measured value
Temperature range (°C)	-5...+105,0
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,2
Temperature compensation	Automatic and manual: 0,000 - 10,000 %/K (linear or non linear); or no compensation
Display	Graphic LCD display with LED backlight
Data logging capacity	5000 data sets
Data logging - log function	Selectable between 1 min and 1 h
Connections	8-pin connection for conductivity and temperature
Outputs	Watertight (IP 43) USB connection (slave, bidirectional)
Power supply	4x AA batteries or mains supply
Compliance	IP 43/GLP

Description	Pk	Cat. No.
Bench conductivity/TDS/°C meter CO 3100 L, pHenomenal®	1 set	663-0233

Description	Conductivity	Cell constant	Connection	Pack type	Reference temperature	Pk	Cat. No.
Conductivity cell, pHenomenal®							
pHenomenal® CO11, 2-pole graphite, integrated NTC 30	10 µS/cm - 20 mS/cm	0,84 cm ⁻¹	8 pin, 1,5 m cable			1	663-0147
Accessories							
pHenomenal® electrode storage tube						1	662-1167
pHenomenal® storage/measuring vessel						1	662-1248
pHenomenal® communication kit (CD-ROM, USB cable, manual), software is compatible with Windows 7, 8, 10 and XP						1	662-1225
Conductivity standards @ 25 °C, potassium chloride solutions							
KCl 0,01 mol/l	1413 µS/cm			Plastic bottle	25 °C	100 ml	83607.180
KCl 0,1 mol/l	12 880 µS/cm			Plastic bottle	25 °C	500 ml	83608.260



CONDUCTIVITY/TDS/°C METER, HANDHELD, PHENOMENAL® CO 3100 H VWR, PART OF AVANTOR

This user friendly portable instrument with robust IP 67 rated housing provides high resolution and accuracy for precise measurements in field applications. Complete with waterproof USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight showing conductivity, TDS and temperature values simultaneously
- Data logging function selectable between 1 min and 1 h
- 5000 data set memory capacity with automatic storing; additional 200 data set memory for manual storage
- Automatic power shut off: Adjustable from 10 min to 24 h
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when re-calibration is required
- Low energy consumption: 4x AA batteries for over 1000 operating hours

Ready to use portable kit CO 3100 H includes instrument in robust plastic carry case, conductivity probe with built-in temperature sensor CO 11 (1,5 m cable), starter kit (conductivity standard and plastic beaker), and (add-in) stand.

Conductivity probes for low conductivities are available on request. Please contact your local VWR sales office for further information.

Model	CO 3100 H
Conductivity range	0,001 µS/cm - 1000 mS/cm
Conductivity resolution	Min. 0,001 µS/cm (depending on probe)
Conductivity accuracy	±0,5% of measured value
Conductivity cell constant	Depending on probe
Conductivity calibration	1 point
Resistivity range	1,000 Ω/cm - 999,9 MΩ/cm
Resistivity resolution	0,001 Ω/cm - 0,1 MΩ/cm
Resistivity accuracy	±0,5% of measured value
Salinity range	0,00 - 70 ppt
TDS range	0 - 1999 mg/L / 2,00 - 19,99 g/L / 20,0 - 199,9 g/L
TDS resolution	1 mg/L / 0,01 g/L / 0,1 g/L
TDS accuracy	±1% of measured value ±1 digit
Temperature range (°C)	-5...+105,0
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,2
Temperature compensation	Automatic and manual: 0,000 - 10,000 %/K or without compensation
Display	Graphic LCD display with LED backlight
Data logging capacity	5000 data sets
Data logging - log function	Selectable between 1 min and 1 h
Connections	8-pin connection for conductivity and temperature
Outputs	Watertight USB connection (slave, bidirectional)
Power supply	4x AA batteries
Compliance	IP 67/GLP

Description	Pk	Cat. No.
Digital handheld CO 3100 H conductivity/TDS/°C meter, pHenomenal®	1 set	663-0234

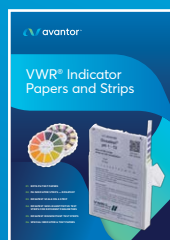
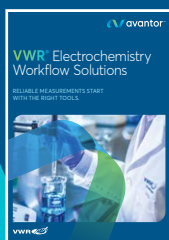
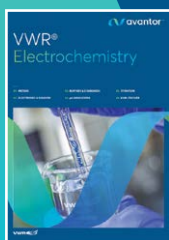
Description	Conductivity	Cell constant	Connection	Pack type	Reference temperature	Pk	Cat. No.
Conductivity cell, pHenomenal®							
pHenomenal® CO11, 2-pole graphite, integrated NTC 30	10 µS/cm - 20 mS/cm	0,84 cm ⁻¹	8 pin, 1,5 m cable			1	663-0147
Accessories							
pHenomenal® electrode storage tube						1	662-1167
pHenomenal® storage/measuring vessel						1	662-1248
pHenomenal® communication kit (CD-ROM, USB cable, manual), software is compatible with Windows 7, 8, 10 and XP						1	662-1225
Conductivity standards @ 25 °C, potassium chloride solutions							
KCl 0,01 mol/l	1413 µS/cm			Plastic bottle	25 °C	100 ml	83607.180
KCl 0,1 mol/l	12 880 µS/cm			Plastic bottle	25 °C	500 ml	83608.260

ADVANCE YOUR MEASUREMENTS WITH CONFIDENCE.

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