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Technical buffer and cleaning solutions

Brief description

pH buffer solution

Technical buffer solutions as defined by DIN 19267 are used to calibrate (adjust) technical pH measuring devices (sensors, cables and measurement amplifiers). Buffer solutions are available with different pH values and colored bottle seals make it easy to tell them apart. Temperature can easily be read in a table on the bottle. Typical accuracy is +/-0.02 pH units. JUMO buffer solutions can be traced to standard reference material of NIST (National Institute of Standards and Technology). A use-by date and batch number appear on the label.

Test solution for redox potential

The redox test solution as defined by ASTM D 1498 is used to verify technical redox measuring devices (sensors, cables and transmitters). The output signal may drift in older redox sensors. The test solution can then be used to readjust the display values in the measurement amplifier. The three anticipated voltage values are then printed for sensors with different reference electrodes and electrolyte concentrations (Pt against Ag/AgCl; Pt against Ag/AgCl in saturated KCl and Pt against calomel). A use-by date and batch number appear on the label.

Reference solutions for electrolytic conductivity

These reference solutions are used to calibrate (adjust) and verify conductive and inductive conductivity measurement devices in technical systems. The solutions can be retraced to PTB and NIST. They consist of a potassium chloride solution with various dilutions. A use-by date and batch number appear on the label.

Auxiliary electrolyte (replacement electrolyte KCl)

pH and redox sensors lose electrolytes through the diaphragm when in use. This is intentional and indispensable for functionality. Electrodes with a liquid reference electrolyte (auxiliary electrolyte) can generally be refilled by the user. A potassium chloride solution (KCl) is required for this purpose. A silver-ion-free solution of KCl is used for sensors with a cartridge-style conduction system (without silver chloride (AgCl)). Sensors with wire conduction require a KCl solution with AgCl. Both types are available from JUMO. The KCl solution can also be used for storing and activating the pH electrodes that are used. The KCl solution neutralizes or dilutes contamination from the electrodes in the area of the diaphragm and regenerates the pH-sensitive swelling layer of the pH membrane glass.

Cleaning solutions

Diaphragm cleaner: consists of an aqueous thiourea solution. This cleaner dissolves silver sulfide, which is not readily soluble, from the diaphragms of pH, redox and reference electrodes.

Electrode cleaner: consists of a solution of pepsin and hydrochloric acid. It helps to remove proteins and calcification on electrochemical sensors.



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Order details

(1) Basic type	
202950	Technical buffer and cleaning solutions
(2) Solution	
10306	Technical buffer solution pH 3,06
10400	Technical buffer solution pH 4,00
10465	Technical buffer solution pH 4,65
10679	Technical buffer solution pH 6,79
10700	Technical buffer solution pH 7,00
10927	Technical buffer solution pH 9,27
11000	Technical buffer solution pH 10,00
20468	Redox test solution 468 mV
30141	Reference solution for electrolytic conductivity 1,41 mS/cm
31288	Reference solution for electrolytic conductivity 12,88 mS/cm
31118	Reference solution for electrolytic conductivity 111,8 mS/cm
40300	Auxiliary electrolyte KCl solution 3,00 mol
50001	Diaphragm cleaner (thiourea solution)
50002	Protein remover (solution of pepsin and hydrochloric acid)
(3) Filling quantity	
50	50 ml
250	250 ml
(4) Extra codes	
000	none
097	With AgCl ^a

^a For value code 40300 only.

Order code	(1)	/	(2)	-	(3)	-	(4)
Order example	202950	/	10927	-	250	-	0000

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Stock versions

Technical buffer solutions as defined by DIN 19267 (packaging unit contains 5 pieces)

Order code	Designation	Filling quantity	Part no.
202950/10306-250/000	Buffer solution pH 3.06 at 20 °C	250 ml	00309747
202950/10400-250/000	Buffer solution pH 4.00 at 20 °C	250 ml	00344977
202950/10400-50/000	Buffer solution pH 4.00 at 20 °C	50 ml	00452491
202950/10465-250/000	Buffer solution pH 4.65 at 20 °C	250 ml	00301070
202950/10679-250/000	Buffer solution pH 6.79 at 20 °C	250 ml	00301071
202950/10700-250/000	Buffer solution pH 7.00 at 20 °C	250 ml	00338371
202950/10927-250/000	Buffer solution pH 9.27 at 20 °C	250 ml	00301072
202950/11000-250/000	Buffer solution pH 10.00 at 20 °C	250 ml	00345027
202950/20468-250/000	Redox potential test solution +468 mV at 25 °C	250 ml	00301073

Cleaner for pH/redox electrodes (packaging unit contains 5 pieces)

Order code	Designation	Filling quantity	Part no.
202950/50001-250/000	Diaphragm cleaner (thiourea solution)	250 ml	00307586
202950/50002-250/000	Electrode cleaner (solution of pepsin and hydrochloric acid, protein remover)	250 ml	00307114

Auxiliary electrolyte (packaging unit contains 5 pieces)

Order code	Designation	Filling quantity	Part no.
202950/40300-250/000	3-molar KCl solution without AgCl (silver-ion free)	250 ml	00306215
202950/40300-50/000	3-molar KCl solution without AgCl (silver-ion free)	50 ml	00452495
202950/40300-250/097	3-molar KCl solution with AgCl (for electrodes with wire conduction in the reference system)	250 ml	00307585

Reference solutions for electrolytic conductivity (packaging unit contains 5 pieces)

Order code	Designation	Filling quantity	Part no.
202950/30141-250/000	KCl 0.01 mol/l; 1.41 mS/cm	250 ml	00346056
202950/31288-250/000	KCl 0.1 mol/l; 12.88 mS/cm	50 ml	00346058
202950/31118-250/000	KCl 1.0 mol/l; 111.80 mS/cm	250 ml	00346060