

Buffer solution – pH working standard of 2nd category

INTENDED FOR

reproducing and transmitting the activity index of hydrogen ions (pH) in aqueous solutions; verification and calibration of pH measuring instruments; controlling the metrological characteristics when tested, and for type approval; error control of measurement procedures (MP) pH of liquid media.

Buffer solutions are aqueous solutions of chemicals that are packaged in plastic vials. The bottle is sealed and has a screw cap with a protective ring to prevent unauthorized access. Buffer solutions have 9 modifications, that differ by concentration of chemicals and reproducible values.



Limits of permissible absolute accuracy of pH reproduction:	
in the temperature range from + 5 to + 20°C	±0.02
in the temperature range from + 20 to + 40°C	±0.01
in the temperature range from + 40 to + 80°C	±0.02
Bottle volume	125 cm ³ , 270 cm ³
Expiry date	1 year

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Marking of buffer solutions	Marking of buffer solutions	Chemical formula of substances	Substance concentration	pH reproducible value at temperature +25°C
BS-pH-1	Potassium tetraoxalate dihydrate	$\text{KH}_3(\text{C}_2\text{O}_4)_2 \cdot 2\text{H}_2\text{O}$	0.1	1.48
BS-pH-2	Potassium tetraoxalate dihydrate	$\text{KH}_3(\text{C}_2\text{O}_4)_2 \cdot 2\text{H}_2\text{O}$	0.05	1.65
BS-pH-3	Potassium hydrogenphthalate	$\text{KHC}_8\text{H}_4\text{O}_4$	0.05	4.01
BS-pH-4	Potassium phosphate monosubstituted	KH_2PO_4	0.025	6.86
	Sodium phosphate twice-substituted	Na_2HPO_4	0.025	
BS-pH-5	Potassium phosphate monosubstituted	KH_2PO_4	0.0087	7.41
	Sodium phosphate twice-substituted	Na_2HPO_4	0.0304	
BS-pH-6	Potassium phosphate monosubstituted	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	0.01	7.43
	Sodium phosphate twice-substituted		0.04	
BS-pH-7	Sodium tetraborate decahydrate	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	0.01	9.18
BS-pH-8	Sodium tetraborate decahydrate	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	0.05	9.18
BS-pH-9	Sodium carbonate	Na_2CO_3	0.025	10.00
	Sodium carbonate acid	NaHCO_3	0.025	