

CellPURE™ Biological Buffers

JustPURE™ “Good” Buffers

Core Essential Buffers



Buffers for Life Science Research

CellPURE Biological Buffers



- Ultrapure zwitterionic biological buffers
- Optimized for cell/tissue culture work
- Wide applicability to molecular biology and biochemical studies
- Manufactured under strict quality control guidelines to ensure performance and reliability

Fisher BioReagents buffers meet the needs of every budget and scale.

- Economical powders come in various package sizes
- Concentrated stock solutions provide convenience in one step of easy dilution
- Ready-to-use solutions offer the biggest time savings of all

Obtaining optimal results in your research requires careful selection of reagents. When your experiments require exact buffering conditions, you can depend on the reliability of Fisher BioReagents buffers. All Fisher BioReagents buffers are manufactured from high-quality raw materials under ISO 9001 2000-certified manufacturing and testing processes. In addition, buffer sterilization is done by submicron filtration and/or autoclaving.

The purpose of a buffer in a biological system is to maintain intracellular and extracellular pH within the physiological range and resist changes in pH due to the presence of internal and external influences. CellPURE Biological Buffers from Fisher BioReagents are ultrapure zwitterionic buffers that possess both positive and negative charges. First described by Good and co-workers in 1966, these organic buffers have pKa values at or near physiological pH and minimal interference with biological processes. CellPURE Biological Buffers are ideal for cell cultivation, isolation of cells, enzyme assays, and other biochemical applications.

(Reference: Good, N.E., et al. (1966) Hydrogen Ion Buffers for Biological Research. *Biochemistry* 5(2): 467-477)

Advantages

- Cell culture tested
- Analyzed for the absence of nucleases and proteases
- Tested for endotoxin and bioburden levels
- pK_a values mostly independent of temperature and concentration
- High water solubility
- Minimal permeability to biological membranes

Applications

- Tissue culture media and maintenance of cell lines
- Enzyme assays
- Electrophoresis of RNA
- Transfection of mammalian cells

Properties of CellPURE Biological Buffers

Cat. No.	Product Description	Formula	Molecular Weight	pK _a @ 25° C	Useful pH Range	Cell Culture Tested	Endotoxin Assay	Nuclease and Protease Tested	Size
BP2941-100	BIS-TRIS	C ₈ H ₁₉ NO ₅	209.24	6.5	5.8 to 7.2	X	X	X	100g
BP2943-100	BIS-TRIS propane	C ₁₁ H ₂₆ N ₂ O ₆	282.33	6.8†	6.3 to 9.5	X	X	X	100g
BP2947-100	BES	C ₆ H ₁₅ NO ₅ S	213.25	7.1	6.4 to 7.8	X	X	X	100g
BP2936-100	MOPS	C ₇ H ₁₅ NO ₄ S	209.26	7.2	6.5 to 7.9	X	X	X	100g
BP2946-25	MOPS sodium salt	C ₇ H ₁₄ NNaO ₄ S	231.25	7.2	6.5 to 7.9	X	X	X	25g
BP2937-100	HEPES	C ₈ H ₁₆ N ₂ O ₄ S	238.30	7.5	6.8 to 8.2	X	X	X	100g
BP2939-100	HEPES Sodium Salt	C ₈ H ₁₇ N ₂ NaO ₄ S	260.29	7.5	6.8 to 8.2	X	X	X	100g
BP2945-100	TES	C ₆ H ₁₅ NO ₆ S	229.25	7.5	6.8 to 8.2	X	X	X	100g

† pK_a = 9.0 for the second dissociation stage

Technical Tip

The Water Makes a Difference. CellPURE Biological Buffers are of the highest quality (purity ≥ 99%). They are tested for low heavy metal content and the absence of endotoxins, nucleases, and proteases. It is important to use only water of the highest quality to prepare the buffer solutions. Water that stands too long in pipes or water produced by a system needing routine maintenance increases the risk for contamination of buffer solutions. Fisher BioReagents provides several grades of high purity water suitable for the preparation of high quality buffer solutions.

JustPURE "Good" Buffers



- Ultrapure zwitterionic buffers
- Optimized for research in cellular and molecular biology
- Low interference with biological reactions

Zwitterionic buffers possessing both positive and negative charges were described in 1966 by Good and co-workers as being suitable for work with biological molecules. Popularly known today as "Good" buffers, these organic buffers have several advantages compared to traditional inorganic buffering systems such as phosphate, borate, and bicarbonate. "Good" buffers approach the "ideal" buffer state by having pKa values at or near physiological pH and minimal interference with biological processes. JustPURE "Good" buffers from Fisher BioReagents have very high purity (assay > 99%) and only trace amounts of metal ions, which makes them useful for applications requiring tight control of elemental content.

(Reference: Good, N.E., et al. (1966) Hydrogen Ion Buffers for Biological Research. *Biochemistry* 5(2): 467-477)

Advantages

- pK_a values mostly independent of temperature and concentration
- High water solubility
- Chemically and enzymatically stable
- Minimal permeability to biological membranes
- Limited effect on biochemical reactions
- Minimal absorption in spectral range 240 to 700nm

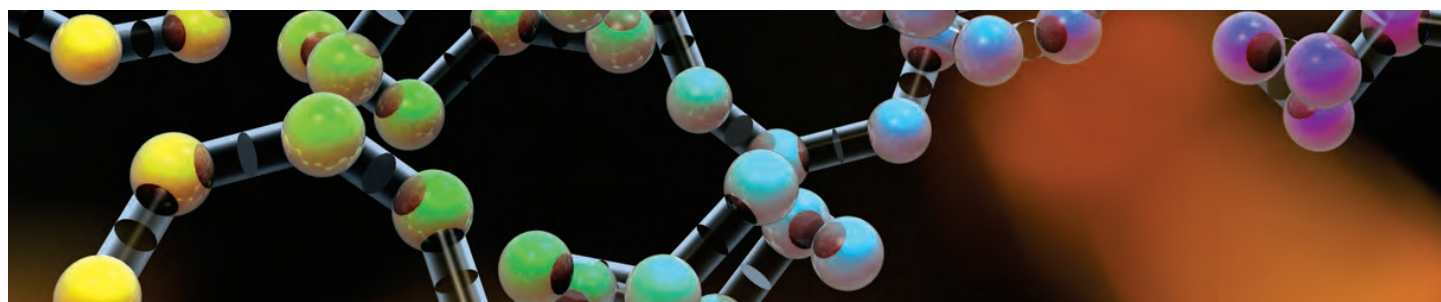
Applications

- High efficiency transfection of mammalian cells
- Gel electrophoresis of RNA
- Protein isolation applications
- Cell cultures and enzyme assays
- Bioanalytical methods such as IEF, 2-D electrophoresis, SDS-PAGE

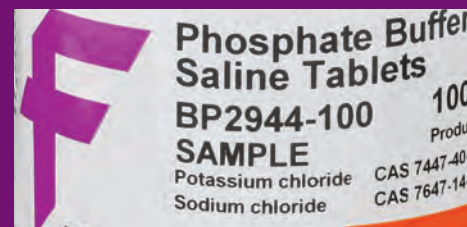
Properties of JustPURE Buffers

Cat. No.	Product Description	CAS No.	Formula	Molecular Weight	pK _a @ 25° C	Useful pH Range	Form	Size
BP2920-250	MES hydrate	4432-31-9	C ₆ H ₁₃ NO ₄ S·xH ₂ O	195.24 (anhydrous)	6.1	5.5 to 6.7	White powder	250g
BP2935-100	ACES	7365-82-4	C ₄ H ₁₀ N ₂ O ₄ S	182.20	6.8	6.1 to 7.5	White powder	100g
BP2924-50	PIPES	5625-37-6	C ₈ H ₁₈ N ₂ O ₆ S ₂	302.37	6.8	6.1 to 7.5	White powder	50g
BP2929-25	BIS-TRIS propane	64431-96-5	C ₁₁ H ₂₆ N ₂ O ₆	282.33	6.8†	6.3 to 9.5	White powder	25g
BP2925-100	MOPS	1132-61-2	C ₇ H ₁₅ NO ₄ S	209.26	7.2	6.5 to 7.9	White powder	100g
BP2926-100	MOPS sodium salt	71119-22-7	C ₇ H ₁₄ NNaO ₄ S	231.25	7.2	6.5 to 7.9	White powder	100g
BP2921-50	HEPES	7365-45-9	C ₈ H ₁₈ N ₂ O ₄ S	238.30	7.5	6.8 to 8.2	White powder	50g
BP2931-100	HEPES sodium salt	75277-39-3	C ₈ H ₁₇ N ₂ NaO ₄ S	260.29	7.5	6.8 to 8.2	White powder	100g
BP2933-100	EPPS	16052-06-5	C ₉ H ₂₀ N ₂ O ₄ S	252.33	8.0	7.3 to 8.7	White powder	100g
BP2922-100	Tricine	5704-04-1	C ₆ H ₁₃ NO ₅	179.17	8.1	7.4 to 8.8	White powder	100g
BP2930-50	Gly-Gly	556-50-3	C ₄ H ₈ N ₂ O ₃	132.12	8.2	7.5 to 8.9	White powder	50g
BP2923-100	TAPS	29915-38-6	C ₇ H ₁₇ NO ₆ S	243.28	8.4	7.7 to 9.1	White powder	100g
BP2934-100	CHES	103-47-9	C ₈ H ₁₇ NO ₃ S	207.29	9.3	8.6 to 10.0	White powder	100g
BP2928-100	CAPS	1135-40-6	C ₉ H ₁₉ NO ₃ S	221.32	10.4	9.7 to 11.1	White powder	100g

† pK_a = 9.0 for the second dissociation stage



Additional Buffers from Fisher BioReagents



NEW Phosphate Buffered Saline (PBS) Products

- Maximum convenience - tablets, pre-weighed powder, and ready-to-use solutions
- High purity for reliability and consistency
- Broad usage in cell culture, molecular biology, and biochemical studies

BP2944-100 Phosphate Buffered Saline Tablets

Application: Specifically developed for use in immunoassay procedures. The need to weigh and mix individual components is eliminated.

Usage: One tablet dissolved in 200mL of molecular biology grade water yields 0.01M phosphate buffer, 0.0027M KCl, and 0.137M NaCl, pH 7.4 at 25°C.

Specifications:

Tablet Diameter.....5/8"
 Dissolution Time.....≤ 10 min.
 pH.....7.2 to 7.6

BP2938-10 Phosphate Buffered Saline with Tween® 20 (in pouches)

Application: Phosphate Buffered Saline with the detergent Tween 20 (PBST) is used as a wash buffer and diluent for ELISA and Western blot.

Usage: Dissolve the pre-weighed contents of one pouch in 1L of molecular biology grade water. Formulation per liter is 0.01M phosphate buffered saline, 0.138M NaCl, 0.0027M KCl, and 0.05% Tween 20, pH 7.4 at 25°C.

Specifications:

AppearanceWhite powder
 Dissolution Time.....< 5 min.
 pH.....7.2 to 7.6

BP2940-4 CellPURE Phosphate Buffered Saline, 10X Solution

Application: CellPURE Phosphate Buffered Saline provides an optimal formulation for cell biology experiments in which the osmolarity of cells must be maintained. PBS can also be used in biochemistry studies for maintaining proteins in a certain pH range.

Usage: When diluted to a 1X concentration using molecular biology grade water, this product yields 0.01M phosphate buffer and 0.154M NaCl, pH 7.4 at 25°C.

Specifications:

Cell Culture Suitability..... Pass test
 Endotoxin Assay..... ≤ 1.0 EU/mL
 Heavy Metals..... ≤ 5ppm (as lead)
 Nuclease and Protease Not detected

BP2942-10 Phosphate Buffered Saline with BSA (in pouches)

Application: Optimized for use in immunohistology protocols.

Usage: Dissolve the pre-weighed contents of one pouch in 1L of molecular biology grade water. Formula per liter is 0.01M phosphate buffered saline, 0.138M NaCl, 0.0027M KCl, and 1.0% (w/v) bovine serum albumin (BSA), pH 7.4 at 25°C.

Specifications:

Dissolution Time..... < 15 min.
 pH..... 7.2 to 7.6
 Protein by UV Absorbance..... 9.0 to 10.5mg/mL



NEW!

Water (0.1µm filtered), Molecular Biology Grade

Cat. No.	Size
BP2819-100	100mL
BP2819-1	1L
BP2819-4	4L
BP2819-10	10L
BP2819-20	20L

Choose Fisher BioReagents® buffers for:

QUALITY: tight specifications

CONSISTENCY: lot-to-lot uniformity

SELECTION: powders, concentrated stock solutions, or ready-to-use liquids

PACKAGING: state-of-the-art containers designed for safety and utility

CONVENIENCE: pre-qualified for a variety of applications

ECONOMY: size configurations to meet all budgets

SCALE: from bench to batch sizes

Description	Size	Cat. No.
Buffers for Life Science Applications		
EDTA Ethylenediamine Tetraacetic Acid		
0.5M (pH 8.0)	100mL	BP2482-100
0.5M (pH 8.0)	500mL	BP2482-500
0.5M (pH 8.0)	1L	BP2482-1
0.5M (pH 8.0)	20L	BP2482-20
0.5M (pH 8.0), DEPC	100mL	BP2483-100
0.5M (pH 8.0), DEPC	500mL	BP2483-500
0.5M (pH 8.0), DEPC	1L	BP2483-1
Powder	500g	BP118-500
HEPES		
1.0M (pH 7.3)	100mL	BP299-100
1.0M (pH 7.3)	500mL	BP299-500
1.0M (pH 7.3)	1L	BP299-1
Crystals	100g	BP310-100
Crystals	500g	BP310-500
Crystals	1kg	BP310-1
Crystals	5kg	BP310-5
PBS Phosphate Buffered Saline		
NEW Tablets	100 tablets	BP2944-100
1X	4L	BP2438-4
1X	20L	BP2438-20
10X	500mL	BP399-500
10X	1L	BP399-1
NEW CellIPURE™ PBS 10X	4L	BP2940-4
10X	4L	BP399-4
10X	20L	BP399-20
1X Powder Concentrate	10L	BP661-10
1X Powder Concentrate	50L	BP661-50
NEW Powder with Tween® 20	10 pouches	BP2938-10
NEW Powder with BSA	10 pouches	BP2942-10
10X Powder Concentrate	2x1L	BP665-1
STET Sodium Chloride-Tris-EDTA-Triton X-100		
1X (pH 8.0)	100mL	BP2480-100
1X (pH 8.0)	500mL	BP2480-500
1X (pH 8.0)	1L	BP2480-1
STE Sodium Chloride-Tris-EDTA		
1X (pH 8.0)	1L	BP2478-1
10X (pH 8.0)	500mL	BP2479-500
10X (pH 8.0)	1L	BP2479-1
TBS Tris-Buffered Saline		
1X (pH 7.4)	1L	BP2472-1
10X (pH 7.4)	100mL	BP2471-100
10X (pH 7.4)	500mL	BP2471-500
10X (pH 7.4)	1L	BP2471-1

* Pre-weighed powder in poly bottle. Dissolve in water.

** Pre-weighed powder in foil pack. Dissolve in water.

Description	Size	Cat. No.
TE Tris-EDTA		
1X (pH 7.4)	100mL	BP2476-100
1X (pH 7.4)	500mL	BP2476-500
1X (pH 7.4)	1L	BP2476-1
1X (pH 8.0)	100mL	BP2473-100
1X (pH 8.0)	500mL	BP2473-500
1X (pH 8.0)	1L	BP2473-1
1X (pH 7.6)	100mL	BP2474-100
1X (pH 7.6)	500mL	BP2474-500
1X (pH 7.6)	1L	BP2474-1
10X (pH 7.4)	100mL	BP2477-100
10X (pH 7.4)	500mL	BP2477-500
10X (pH 7.4)	1L	BP2477-1
10X (pH 7.6)	100mL	BP2475-100
10X (pH 7.6)	500mL	BP2475-500
10X (pH 7.6)	1L	BP2475-1
100X (pH 8.0)	1L	BP1338-1
100X (pH 8.0)	4L	BP1338-4
100X	1L**	BP1339-1
Tris Buffer		
0.3M	500mL	BP1761-500
0.3M	1L	BP1761-1
2.0M	100mL	BP1759-100
2.0M	500mL	BP1759-500
Tris Hydrochloride		
1.0M (pH 7.0)	100mL	BP1756-100
1.0M (pH 7.0)	500mL	BP1756-500
1.0M (pH 7.5)	100mL	BP1757-100
1.0M (pH 7.5)	500mL	BP1757-500
1.0M (pH 8.0)	100mL	BP1758-100
1.0M (pH 8.0)	500mL	BP1758-500
Solid	500g	BP153-500
Solid	1kg	BP153-1
Tris Base		
Crystals	500g	BP152-500
Crystals	1kg	BP152-1
Crystals	5kg	BP152-5
Crystals	10kg	BP152-10
Crystals	25kg	BP152-25
Water		
Biotech Grade	4L	BP2485-4
	20L	BP2485-20
Nuclease-Free, Sterile	50mL	BP2484-50
	100mL	BP2484-100
DNA Grade, Sterile	1L	BP2470-1
RNA Grade, DEPC-treated, Sterile	1L	BP561-1

Related Core BioReagents

NEW!

Ethanol, Molecular Biology Grade

Cat. No.	Size
BP2818-100	100mL
BP2818-500	500mL
BP2818-4	4L

NEW!

Isopropanol, Molecular Biology Grade

Cat. No.	Size
BP2618-500	500mL
BP2618-1	1L
BP2618-212	2.5L
BP2618-4	4L



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10_3096 KE/LY 5M-IW-11/15 BN1115103