

StockOptions™ Phosphate buffer kit is a preformulated, sterile filtered set of titrated buffer stocks. The StockOptions buffer stock reagents are supplied as 1.0 M stock solutions in 10 milliliter volumes. Each StockOptions Phosphate buffer reagent is carefully titrated using Sodium phosphate monobasic monohydrate and Potassium phosphate dibasic. StockOptions Phosphate is comprised of 17 unique reagents covering the pH range of 5.0 to 8.2 in 0.2 pH unit increments.

Suggested Use

StockOptions Phosphate is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or perform solubility, stability and crystallization assays evaluating the Phosphate buffer system. StockOptions Phosphate reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Phosphate reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Phosphate buffer kit it is possible to formulate and screen 17 unique pH levels.

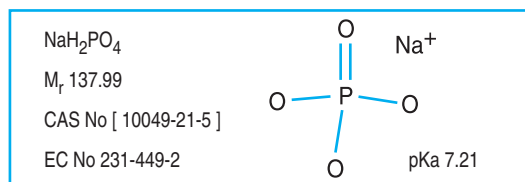
During crystallization experiments the Phosphate buffer system can be utilized at a 0.1 M final concentration during the screening, optimization, and production of biological macromolecular crystals. One can dilute the StockOptions Phosphate buffer solution 1:10 to achieve a final concentration of 0.1 M. For example, dilute 1 milliliter of StockOptions Phosphate to a final volume of 10 milliliters to achieve a final concentration of 0.1 M Sodium phosphate monobasic monohydrate / Potassium phosphate dibasic.

Please note the final pH of the solution created using StockOptions may vary based upon what other reagents are added to the StockOptions Phosphate buffer.

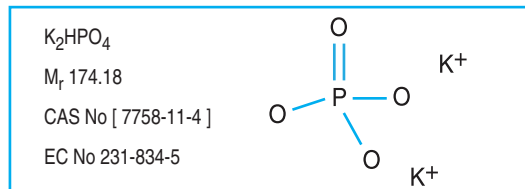
Specifications

Useful pH Range: 5.0 - 8.2

Sodium phosphate monobasic monohydrate



Potassium phosphate dibasic



Example

Make a custom 10 ml screen reagent of:

Solution Composition:

30% w/v Polyethylene glycol 8,000,
0.1 M Sodium phosphate monobasic monohydrate /
Potassium phosphate dibasic pH 6.8

Suggested Stock Solutions:

50% w/v Polyethylene glycol 8,000 (HR2-535),
1.0 M Sodium phosphate monobasic monohydrate /
Potassium phosphate dibasic pH 6.8 (StockOptions Phosphate)

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M Sodium phosphate monobasic monohydrate / Potassium phosphate dibasic pH 6.8 into the tube.
3. Pipet 6 ml of 50% w/v Polyethylene glycol 8,000 into a sterile screw top tube.
4. Seal the tube, and mix until the solution is homogeneous.

Phosphate Interactions

If a complex forms between the buffer and a required cofactor, say a metal cation like zinc, calcium or magnesium, your experiment also might be compromised. For example calcium precipitates or crystallizes as calcium phosphate in phosphate buffers. Not only would any Ca^{2+} requiring experiments be compromised, but the buffering capacity of the phosphate buffer also is affected. Be aware of the potential for false positive salt crystals when using phosphate buffers in the presence of metal cations.

For Best Results

Use Hampton Research Optimize™ together with StockOptions reagents for best results.

Technical Support

Inquiries regarding StockOptions Phosphate Buffer Kit reagent formulation, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are available 24 hours a day. Telephone technical support is available 8:00 a.m. to 4:30 p.m. USA Pacific Standard Time.

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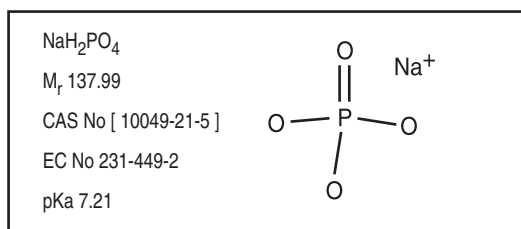
Website: www.hamptonresearch.com

Tube #	pH \diamond	Buffer
1.	5.0	0.980 M Sodium phosphate monobasic monohydrate, 0.020 M Potassium phosphate dibasic
2.	5.2	0.976 M Sodium phosphate monobasic monohydrate, 0.024 M Potassium phosphate dibasic
3.	5.4	0.948 M Sodium phosphate monobasic monohydrate, 0.052 M Potassium phosphate dibasic
4.	5.6	0.900 M Sodium phosphate monobasic monohydrate, 0.100 M Potassium phosphate dibasic
5.	5.8	0.840 M Sodium phosphate monobasic monohydrate, 0.160 M Potassium phosphate dibasic
6.	6.0	0.764 M Sodium phosphate monobasic monohydrate, 0.236 M Potassium phosphate dibasic
7.	6.2	0.684 M Sodium phosphate monobasic monohydrate, 0.316 M Potassium phosphate dibasic
8.	6.4	0.592 M Sodium phosphate monobasic monohydrate, 0.408 M Potassium phosphate dibasic
9.	6.6	0.504 M Sodium phosphate monobasic monohydrate, 0.496 M Potassium phosphate dibasic
10.	6.8	0.412 M Sodium phosphate monobasic monohydrate, 0.588 M Potassium phosphate dibasic
11.	7.0	0.324 M Sodium phosphate monobasic monohydrate, 0.676 M Potassium phosphate dibasic
12.	7.2	0.240 M Sodium phosphate monobasic monohydrate, 0.760 M Potassium phosphate dibasic
13.	7.4	0.168 M Sodium phosphate monobasic monohydrate, 0.832 M Potassium phosphate dibasic
14.	7.6	0.108 M Sodium phosphate monobasic monohydrate, 0.892 M Potassium phosphate dibasic
15.	7.8	0.068 M Sodium phosphate monobasic monohydrate, 0.932 M Potassium phosphate dibasic
16.	8.0	0.044 M Sodium phosphate monobasic monohydrate, 0.956 M Potassium phosphate dibasic
17.	8.2	0.040 M Sodium phosphate monobasic monohydrate, 0.960 M Potassium phosphate dibasic

\diamond pH is the calculated pH at 25.0 degrees Celsius of the 1.0 M Phosphate solution.

pH is determined by the ratio of Sodium phosphate monobasic monohydrate / Potassium phosphate dibasic.

Sodium phosphate monobasic monohydrate



Potassium phosphate dibasic

