

StockOptions™ PIPES 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 PIPES buffer reagent is carefully titrated using Sodium hydroxide. StockOptions PIPES is comprised of 15 unique reagents covering the pH range of 6.1 to 7.5 in 0.1 pH unit increments.

Suggested Use

StockOptions PIPES 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 standard screen solutions from Hampton Research kits such as Natrix™ and Natrix HT™. StockOptions PIPES reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions PIPES reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions PIPES buffer kit it is possible to formulate and screen 15 unique pH levels.

During crystallization experiments the PIPES buffer system is typically utilized at a 0.1 M final concentration during the screening, optimization, and production of biological macromolecular crystals. It is therefore recommended that one dilute the StockOptions PIPES buffer solution 1:10 to achieve a final concentration of 0.1 M. For example, dilute 1 milliliter of StockOptions PIPES to a final volume of 10 milliliters to achieve a final concentration of 0.1 M PIPES.

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

Example 1

Natrix 2 Reagent 43 (1 ml volume in a plate reservoir)

Solution Composition: 0.05 M PIPES pH 7.5
0.02 M Magnesium chloride hexahydrate
4% w/v Polyethylene glycol 8,000
0.001 M Spermine tetrahydrochloride

1. Pipet 850 µl of sterile filtered deionized water into the plate reservoir.
2. Pipet 50 µl of 1.0 M PIPES pH 7.5 into the plate reservoir.
3. Pipet 10 µl of 2.0 M Magnesium chloride hexahydrate into the plate reservoir.
4. Pipet 80 µl of 50% w/v Polyethylene glycol 8,000 into the plate reservoir.
5. Pipet 10 µl of 0.1 M Spermine tetrahydrochloride into the plate reservoir.
6. Aspirate and dispense the solution ten times or until homogeneous.

Note: Water has been added first to enhance subsequent reagent solubility. Also note that one of the larger volumes has been added last so the pipet is already set at a large volume to enhance mixing during aspiration and dispensing.

For Best Results

Use Hampton Research Optimize™ together with StockOptions reagents for best results. StockOptions reagents are stable at room temperature and are best if used within 12 months of receipt.

Specifications

Buffer Reagent: PIPES

$C_8H_{18}N_2O_6S_2$ M_r 302.37 CAS No [5625-37-6] EC No 227-057-6

Titrated with: Sodium hydroxide

NaOH M_r 40.00 CAS No [1310-73-2] EC No 215-185-5

Useful pH Range: 6.1 - 7.5



Technical Support

Inquiries regarding StockOptions PIPES Buffer Kit reagent formulation, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please email your inquiries to info@hrmail.com or visit <https://hamptonresearch.com/>.

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pH	Buffer	Titrant
6.1	1.0 M PIPES	Sodium hydroxide
6.2	1.0 M PIPES	Sodium hydroxide
6.3	1.0 M PIPES	Sodium hydroxide
6.4	1.0 M PIPES	Sodium hydroxide
6.5	1.0 M PIPES	Sodium hydroxide
6.6	1.0 M PIPES	Sodium hydroxide
6.7	1.0 M PIPES	Sodium hydroxide
6.8	1.0 M PIPES	Sodium hydroxide
6.9	1.0 M PIPES	Sodium hydroxide
7.0	1.0 M PIPES	Sodium hydroxide
7.1	1.0 M PIPES	Sodium hydroxide
7.2	1.0 M PIPES	Sodium hydroxide
7.3	1.0 M PIPES	Sodium hydroxide
7.4	1.0 M PIPES	Sodium hydroxide
7.5	1.0 M PIPES	Sodium hydroxide