

StockOptions™ Hepes 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 Hepes buffer reagent is carefully titrated using Sodium hydroxide. StockOptions Hepes is comprised of 15 unique reagents covering the pH range of 6.8 to 8.2 in 0.1 pH unit increments.

### Suggested Use

StockOptions Hepes 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 Index™ and Crystal Screen 2™. StockOptions Hepes reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Hepes reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Hepes buffer kit it is possible to formulate and screen 15 unique pH levels.

During crystallization experiments the Hepes 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 Hepes buffer solution 1:10 to achieve a final concentration of 0.1 M. For example, dilute 1 milliliter of StockOptions Hepes to a final volume of 10 milliliters to achieve a final concentration of 0.1 M HEPES.

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

### Example 1

Crystal Screen 2 Reagent 30 (1 ml volume in a plate reservoir)

Solution Composition: 0.1 M HEPES pH 7.5  
10% w/v Polyethylene glycol 6,000  
5% v/v (+/-)-2-Methyl-2,4-pentanediol

Suggested Stock Solutions: 100% MPD, 1.0 M HEPES pH 7.5 (StockOptions Hepes), 50% w/v Polyethylene glycol 6,000

1. Pipet 650 µl of sterile filtered deionized water into the plate reservoir.
2. Pipet 100 µl of 1.0 M HEPES pH 7.5 into the plate reservoir.
3. Pipet 50 µl of 100% MPD into the plate reservoir.
4. Pipet 200 µl of 50% w/v Polyethylene glycol 6,000 into the plate reservoir.
5. 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.

### Example 2

Make a custom 10 ml screen reagent of:

Solution Composition: 30% w/v Polyethylene glycol 8,000  
0.1 M HEPES pH 6.8.

Suggested Stock Solutions: 50% w/v Polyethylene glycol 8,000  
1.0 M HEPES pH 6.8 (StockOptions Hepes)

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M HEPES 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.

### 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

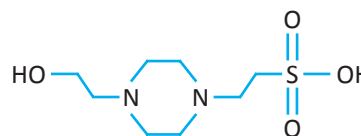
Buffer Reagent: HEPES

C<sub>8</sub>H<sub>18</sub>N<sub>2</sub>O<sub>4</sub>S M<sub>r</sub> 238.31 CAS No [7365-45-9] EC No 230-907-9

Titrated with: Sodium hydroxide

NaOH M<sub>r</sub> 40.00 CAS No [1310-73-2] EC No 215-185-5

Useful pH Range: 6.8 - 8.2



### Technical Support

Inquiries regarding StockOptions Hepes 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.