

StockOptions™ CHES 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 CHES buffer reagent is carefully titrated using Sodium hydroxide. StockOptions CHES is comprised of 15 unique reagents covering the pH range of 8.6 to 10.0 in 0.1 pH unit increments.

### Suggested Use

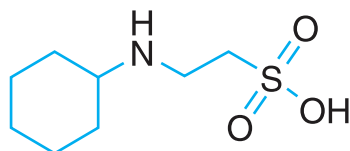
StockOptions CHES is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or standard screen solutions from Hampton Research kits such as the GRAS Screens. StockOptions CHES reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions CHES reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions CHES buffer kit it is possible to formulate and screen 15 unique pH levels.

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

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

### Specifications

Useful pH Range: 8.6 - 10.0



Buffer Reagent: CHES

C<sub>8</sub>H<sub>17</sub>NO<sub>3</sub>S   M<sub>r</sub> 207.29   CAS No [ 103-47-9 ]   EC No 203-115-6   pKa = 9.3

Titrated with: Sodium hydroxide

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

### Example

Make a custom 10 ml screen reagent of:

#### Solution Composition:

30% w/v Polyethylene glycol 8,000,  
0.1 M CHES pH 10.0

#### Suggested Stock Solutions:

50% w/v Polyethylene glycol 8,000 (HR2-535),  
1.0 M CHES pH 10.0 (StockOptions CHES)

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M CHES pH 10.0 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.

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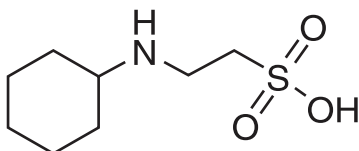
Technical Support e-mail: tech@hrmail.com

Website: www.hamptonresearch.com

Tube #	pH $\diamond$	Buffer	Titrant
1.	8.6	1.0 M CHES	Sodium hydroxide
2.	8.7	1.0 M CHES	Sodium hydroxide
3.	8.8	1.0 M CHES	Sodium hydroxide
4.	8.9	1.0 M CHES	Sodium hydroxide
5.	9.0	1.0 M CHES	Sodium hydroxide
6.	9.1	1.0 M CHES	Sodium hydroxide
7.	9.2	1.0 M CHES	Sodium hydroxide
8.	9.3	1.0 M CHES	Sodium hydroxide
9.	9.4	1.0 M CHES	Sodium hydroxide
10.	9.5	1.0 M CHES	Sodium hydroxide
11.	9.6	1.0 M CHES	Sodium hydroxide
12.	9.7	1.0 M CHES	Sodium hydroxide
13.	9.8	1.0 M CHES	Sodium hydroxide
14.	9.9	1.0 M CHES	Sodium hydroxide
15.	10.0	1.0 M CHES	Sodium hydroxide

$\diamond$  pH is the measured pH at 25.0 degrees Celsius of the 1.0 M CHES solution.  
pH adjustment performed using Sodium hydroxide.

Buffer Reagent: CHES



$C_8H_{17}NO_3S$   $M_r$  207.29 CAS No [ 103-47-9 ] EC No 203-115-6  $pK_a = 9.3$  at 25.0°C

Titrated with: Sodium hydroxide

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