StockOptions™

Glycine Buffer Kit (pH 8.6 - 10.6)

HAMPTON RESEARCH
Solutions for Crystal Growth

User Guide **HR2-250**

StockOptions™ Glycine 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 Glycine buffer reagent is carefully titrated using Sodium hydroxide. StockOptions Glycine is comprised of 21 unique reagents covering the pH range of 8.6 to 10.6 in 0.1 pH unit increments.

Suggested Use

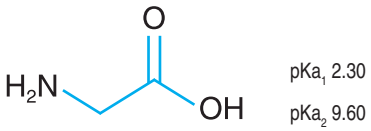
StockOptions Glycine is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or standard screen solutions from Hampton Research kits such as Slice pH™. StockOptions Glycine reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Glycine reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Glycine buffer kit it is possible to formulate and screen 21 unique pH levels.

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

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

Specifications

Useful pH Range: 8.6 - 10.6



pKa$_1$ 2.30
pKa$_2$ 9.60

Buffer Reagent: Glycine

NH_2CH_2COOH	M_r 75.07	CAS No [56-40-6]	EC No 200-272-2

Titrated with: Sodium hydroxide

NaOH	M_r 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 Glycine pH 9.0

Suggested Stock Solutions:
50% w/v Polyethylene glycol 8,000 (HR2-535),
1.0 M Glycine pH 9.0 (StockOptions Glycine)

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M Glycine pH 9.0 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.

For Best Results

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

Technical Support

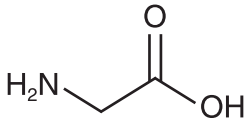
Inquiries regarding StockOptions Glycine Buffer Kit reagent formulation, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are available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

Hampton Research
34 Journey
Aliso Viejo, CA 92656-3317 U.S.A.
Tel: (949) 425-1321 • Fax: (949) 425-1611
Technical Support e-mail: tech@hrmail.com
Website: www.hamptonresearch.com

Tube #	pH ◊	Buffer	Titrant
1.	8.6	1.0 M Glycine	Sodium hydroxide
2.	8.7	1.0 M Glycine	Sodium hydroxide
3.	8.8	1.0 M Glycine	Sodium hydroxide
4.	8.9	1.0 M Glycine	Sodium hydroxide
5.	9.0	1.0 M Glycine	Sodium hydroxide
6.	9.1	1.0 M Glycine	Sodium hydroxide
7.	9.2	1.0 M Glycine	Sodium hydroxide
8.	9.3	1.0 M Glycine	Sodium hydroxide
9.	9.4	1.0 M Glycine	Sodium hydroxide
10.	9.5	1.0 M Glycine	Sodium hydroxide
11.	9.6	1.0 M Glycine	Sodium hydroxide
12.	9.7	1.0 M Glycine	Sodium hydroxide
13.	9.8	1.0 M Glycine	Sodium hydroxide
14.	9.9	1.0 M Glycine	Sodium hydroxide
15.	10.0	1.0 M Glycine	Sodium hydroxide
16.	10.1	1.0 M Glycine	Sodium hydroxide
17.	10.2	1.0 M Glycine	Sodium hydroxide
18.	10.3	1.0 M Glycine	Sodium hydroxide
19.	10.4	1.0 M Glycine	Sodium hydroxide
20.	10.5	1.0 M Glycine	Sodium hydroxide
21.	10.6	1.0 M Glycine	Sodium hydroxide

◊ pH is the measured pH at 25.0 degrees Celsius of the 1.0 M Glycine solution.
pH adjustment performed using Sodium hydroxide.

Buffer Reagent: Glycine



NH_2CH_2COOH M_r 75.07 CAS No [56-40-6] EC No 200-272-2 $pKa_1 = 2.30$, $pKa_2 = 9.60$

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34 Journey
Aliso Viejo, CA 92656-3317 U.S.A.
Tel: (949) 425-1321 • Fax: (949) 425-1611
e-mail: tech@hrmail.com
Website: www.hamptonresearch.com

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