

Sodium Acetate Buffer Kit (pH 3.6 - 5.6)

User Guide**HR2-233**

StockOptions™ Sodium Acetate 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 Sodium Acetate buffer reagent is carefully titrated using Hydrochloric acid. StockOptions Sodium Acetate is comprised of 21 unique reagents covering the pH range of 3.6 to 5.6 in 0.1 pH unit increments.

Suggested Use

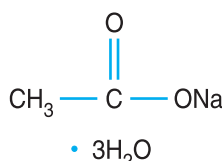
StockOptions Sodium Acetate is designed to help researchers improve the speed, accuracy, precision, and quality of the formulation of crystallization screen solutions and crystallization optimization solutions. Researchers can use the individual StockOptions reagents to conveniently formulate custom screen solutions or standard screen solutions from Hampton Research kits such as Crystal Screen™, Crystal Screen 2™, Crystal Screen Cryo™, Crystal Screen Lite™, and MembFac™. StockOptions Sodium Acetate reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Sodium Acetate reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Sodium Acetate buffer kit it is possible to formulate and screen 21 unique pH levels.

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

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

Specifications

Useful pH Range: 3.6 - 5.6



Buffer Reagent: Sodium acetate trihydrate

$\text{C}_2\text{H}_3\text{NaO}_2 \cdot 3\text{H}_2\text{O}$	M_r 136.08	CAS No [6131-90-4]	EC No 204-823-8
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Titrated with: Hydrochloric acid

HCl	M_r 36.46	CAS No [7647-01-0]	EC No 231-595-7
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Example 1

Crystal Screen Reagent 10 (1 ml volume in a plate reservoir):

Solution Composition: 0.2 M Ammonium acetate, 0.1 M Sodium acetate trihydrate pH 4.6, 30% w/v Polyethylene glycol 4,000

Suggested Stock Solutions:

50% w/v PEG 4,000 (HR2-529), 1.0 M Sodium acetate trihydrate pH 4.6 (StockOptions Sodium Acetate), 1.0 M Ammonium acetate (HR2-565)

1. Pipet 100 μl of sterile filtered deionized water into the plate reservoir.
2. Pipet 200 μl of 1.0 M Ammonium acetate into the plate reservoir.
3. Pipet 100 μl of 1.0 M Sodium acetate trihydrate pH 4.6 into the plate reservoir.
4. Pipet 600 μl of 50% PEG 4,000 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 the largest volume 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 Sodium acetate trihydrate pH 5.0

Suggested Stock Solutions: 50% w/v PEG 8,000 (HR2-535),

1.0 M Sodium acetate trihydrate pH 5.0 (StockOptions Sodium Acetate)

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M Sodium acetate trihydrate pH 5.0 into the tube.
3. Pipet 6 ml of 50% w/v PEG 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 Sodium Acetate 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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pH	Buffer	Titrant
3.6	1.0 M Sodium acetate trihydrate	Hydrochloric acid
3.7	1.0 M Sodium acetate trihydrate	Hydrochloric acid
3.8	1.0 M Sodium acetate trihydrate	Hydrochloric acid
3.9	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.0	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.1	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.2	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.3	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.4	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.5	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.6	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.7	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.8	1.0 M Sodium acetate trihydrate	Hydrochloric acid
4.9	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.0	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.1	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.2	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.3	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.4	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.5	1.0 M Sodium acetate trihydrate	Hydrochloric acid
5.6	1.0 M Sodium acetate trihydrate	Hydrochloric acid