

StockOptions™ Tris Hydrochloride 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 Tris Hydrochloride buffer reagent is carefully titrated using sodium hydroxide. StockOptions Tris Hydrochloride is comprised of 21 unique reagents covering the pH range of 7.0 to 9.0 in 0.1 pH unit increments.

Suggested Use

StockOptions Tris Hydrochloride 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 Cryo™, Crystal Screen Lite™, Natrix™, and MembFac™. StockOptions Tris Hydrochloride reagents can also be used to create solutions for the refinement and optimization of preliminary crystallization conditions. Finally, StockOptions Tris Hydrochloride reagents can be used to create accurate, precise, reproducible, high quality solutions for the production of single crystals. Utilizing the reagents in the StockOptions Tris Hydrochloride buffer kit it is possible to formulate and screen 21 unique pH levels.

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

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

Example 1

Crystal Screen Lite Reagent 6 (1 ml volume in a plate reservoir)

Solution Composition: 15% w/v Polyethylene glycol 4,000,
0.1 M TRIS hydrochloride pH 8.5,
0.2 M Magnesium chloride hexahydrate

Suggested Stock Solutions: 50% w/v PEG 4,000, 1.0 M TRIS hydrochloride pH 8.5 (StockOptions Tris Hydrochloride), 2.0 M Magnesium chloride hexahydrate

1. Pipet 500 µl of sterile filtered deionized water into the plate reservoir.
2. Pipet 100 µl of 1.0 M TRIS hydrochloride pH 8.5 into the plate reservoir.
3. Pipet 100 µl of 2.0 M Magnesium chloride hexahydrate into the plate reservoir.

4. Pipet 300 µl of 50% w/v 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 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 TRIS Hydrochloride pH 8.0

Suggested Stock Solutions: 50% w/v PEG 8,000, 1.0 M TRIS hydrochloride pH 8.0 (StockOptions Tris Hydrochloride).

1. Pipet 3 ml of deionized, sterile filtered water into the tube.
2. Pipet 1 ml of 1.0 M TRIS hydrochloride pH 8.0 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.

Specifications

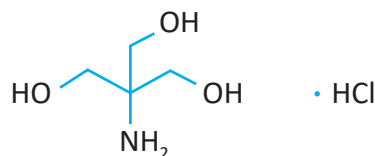
Buffer Reagent: TRIS hydrochloride

$C_4H_{11}NO_3 \cdot HCl$ M_r 157.60 CAS No [1185-53-1] EC No 214-684-5

Titrated with: Sodium hydroxide

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

Useful pH Range: 7.0 - 9.0



Technical Support

Inquiries regarding StockOptions Tris Hydrochloride 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.

pH	Buffer	Titrant
7.0	1.0 M TRIS hydrochloride	Sodium hydroxide
7.1	1.0 M TRIS hydrochloride	Sodium hydroxide
7.2	1.0 M TRIS hydrochloride	Sodium hydroxide
7.3	1.0 M TRIS hydrochloride	Sodium hydroxide
7.4	1.0 M TRIS hydrochloride	Sodium hydroxide
7.5	1.0 M TRIS hydrochloride	Sodium hydroxide
7.6	1.0 M TRIS hydrochloride	Sodium hydroxide
7.7	1.0 M TRIS hydrochloride	Sodium hydroxide
7.8	1.0 M TRIS hydrochloride	Sodium hydroxide
7.9	1.0 M TRIS hydrochloride	Sodium hydroxide
8.0	1.0 M TRIS hydrochloride	Sodium hydroxide
8.1	1.0 M TRIS hydrochloride	Sodium hydroxide
8.2	1.0 M TRIS hydrochloride	Sodium hydroxide
8.3	1.0 M TRIS hydrochloride	Sodium hydroxide
8.4	1.0 M TRIS hydrochloride	Sodium hydroxide
8.5	1.0 M TRIS hydrochloride	Sodium hydroxide
8.6	1.0 M TRIS hydrochloride	Sodium hydroxide
8.7	1.0 M TRIS hydrochloride	Sodium hydroxide
8.8	1.0 M TRIS hydrochloride	Sodium hydroxide
8.9	1.0 M TRIS hydrochloride	Sodium hydroxide
9.0	1.0 M TRIS hydrochloride	Sodium hydroxide