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Product Information

Trizma® base

Catalog Number **T1503**
Store at Room Temperature

CAS RN 77-86-1
Synonyms: Tris base, Tris(hydroxyamino)methane, 2-Amino-2-(hydroxymethyl)-1,3-propanediol, Tris(hydroxymethyl)aminomethane, THAM, Trometamol
Note: The "Tris" described in this document is **not** the "Tris" used to flame-proof fabric. That compound, Tris(2,3-dibromopropyl)phosphate, has been reported to be a cancer suspect agent.

Molecular Formula: $C_4H_{11}NO_3$
Molecular Weight: 121.14
pK_a (20 °C):[1] 8.3
Melting Point:[1] 171-172 °C

Product Description

Trizma® is the registered trademark of Sigma-Aldrich applied to various compounds of Tris(hydroxymethyl)-aminomethane that are prepared by Sigma-Aldrich.

Tris(hydroxyamino)methane, or “Tris” for short, is an established basimetric standard and buffer used in biochemistry and molecular biology.[1] It may be used by itself as a buffer or as a component of mixed buffer formulations.[2] These different buffer formulations include:

- Tris-EDTA (TE) buffer
- Tris magnesium buffer
- Tris-acetate-EDTA (TAE) buffer
- Tris-borate-EDTA (TBE) buffer
- Tris-buffered saline (TBS)
- Tris-buffered saline with dextrose (TBS-D)
- Tris-glycine buffer
- Tris-phosphate EDTA buffer
- Tris-SDS buffer
- Tris-sucrose
- Tris-Tricine-SDS buffer

When preparing Trizma solutions at a given pH and temperature, it is necessary to choose the proper mixture of Trizma free base and a corresponding Trizma salt to give the desired final pH at the desired temperature.

Trizma has a significant temperature coefficient, which affects the pH of the solution. For a given concentration the following changes are observed:

- From 5 °C to 25 °C, the pH decreases an average of 0.03 pH units per °C.
- From 25 °C to 37 °C, the pH decreases an average of 0.025 pH units per °C.

This product has been used in various studies and application fields, including:

- Gene transfer and expression in cultured cells[3]
- Investigation of nuclear pores inside cells[4]
- Enzymatic assays[5,6]
- Tissue sample analysis[7]
- 2-D protein electrophoresis[8]
- Immunohistochemistry[9]
- Fluorescence *in situ* Hybridization (FISH)[10]

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This product is soluble in water (666 mg/mL), yielding a clear, colorless solution.

Storage/Stability

Trizma solutions can be autoclaved.

References

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3. Kampert, S.E. *et al*., "Gene Transfer and Expression in Animal Cells", in *Handbook of Molecular and Cellular Methods in Biology and Medicine* (L.J. Cseke, P.B. Kaufman, A. Kirakosyan, M.V. Westfall, eds.). CRC Press (Boca Raton, FL), Chapter 32, pp. 557-578 (2011).
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