

Product Information

Trizma® hydrochloride

Catalog Number **T3253**

Store at Room Temperature

CAS RN 1185-53-1

Synonyms: Tris HCl, Tris hydrochloride, Tris(hydroxymethyl)aminomethane hydrochloride

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: $C_4H_{11}NO_3 \cdot HCl$

Molecular Weight: 157.60

$pK_a = 8.3$ (20 °C);¹ 7.82 (37 °C);¹ 8.08 (25 °C)²

Melting Point: 150–152 °C

Product Description

Trizma® is Sigma-Aldrich's registered trademark applied to various compounds of Tris(hydroxymethyl)-aminomethane that are prepared by Sigma-Aldrich. For example, Trizma HCl is the completely neutralized crystalline hydrochloride salt of Tris. Trizma Base is the pure Tris itself.

Tris(hydroxyamino)methane, or "Tris" for short, is an established basimetric standard and buffer used in biochemistry and molecular biology.³ It may be used by itself as a buffer or as a component of mixed buffer formulations.⁴ 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

This product has been used in such applications and systems as:

- Electrophoresis^{5,6}
- Blocking buffer⁷
- Immunohistochemistry⁸
- Immunocytochemistry⁹
- Cell sorting¹⁰
- Enzymatic assays¹¹⁻¹⁴
- Western blotting¹⁵

Product Profile

- The pH of Trizma hydrochloride in water is concentration dependent. The pH of a 0.1 M aqueous solution is ~4.7, while the pH of a 40% (w/w) aqueous solution is typically 2.6–3.3.
- The buffering range of Trizma buffers is typically pH 7.0–9.0 (at 25 °C).¹⁶⁻¹⁹
- Trizma is also very stable, as the powder can be dried at 100 °C for up to 4 hours.²⁰
- However, in the presence of manganese salts, Trizma buffers will form precipitates.
- In addition, certain electrodes do not give accurate pH readings when used with Trizma buffers.²¹

Preparation Instructions

This product is soluble in water (667 mg/mL).

Storage/Stability

Trizma buffer solutions can be autoclaved.²²

Precautions and Disclaimer

For research or further manufacturing use only. Not intended for direct use in humans or animals. TSCA-exempt use only in US. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

References

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