

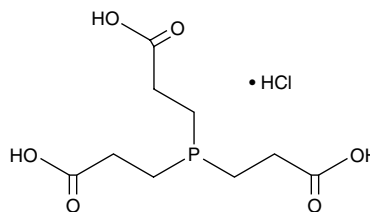
Product Information



TCEP (hydrochloride)

Item No. 14329

CAS Registry No.: 51805-45-9
Formal Name: 3,3',3''-phosphinylidynetris-propanoic acid, monohydrochloride
Synonym: Tris(2-carboxyethyl)phosphine
MF: C₉H₁₅O₆P • HCl
FW: 286.7
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that TCEP (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

TCEP (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the TCEP (hydrochloride) in the solvent of choice. TCEP (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of TCEP (hydrochloride) in these solvents is approximately 3.3 and 2 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of TCEP (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of TCEP (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

TCEP is an odorless, selective, and water-soluble reducing agent that is commonly used in many laboratory applications. It is commonly used to rapidly reduce protein and peptide disulfide bonds. TCEP can be combined with proteases to simultaneously reduce and digest proteins prior to mass spectrometry in order to dramatically increase sequence coverage.¹ It has also been used to measure ascorbic acid and dehydroascorbic acid in biological samples.^{2,3}

References

1. Zhang, H.-M., McLoughlin, S.M., Frausto, S.D., *et al.* Simultaneous reduction and digestion of proteins with disulfide bonds for hydrogen/deuterium exchange monitored by mass spectrometry. *Anal. Chem.* **82**(4), 1450-1454 (2010).
2. Lykkesfeldt, J. Determination of ascorbic acid and dehydroascorbic acid in biological samples by high-performance liquid chromatography using subtraction methods: Reliable reduction with *tris*[2-carboxyethyl]phosphine hydrochloride. *Anal. Biochem.* **282**(1), 89-93 (2000).
3. Sato, Y., Uchiki, T., Iwama, M., *et al.* Determination of dehydroascorbic acid in mouse tissues and plasma by using *tris*(2-carboxyethyl)phosphine hydrochloride as reductant in metaphosphoric acid/ethylenediaminetetraacetic acid solution. *Biol. Pharm. Bull.* **33**(3), 364-369 (2010).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/14329

Cayman Chemical

Mailing address

1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone

(800) 364-9897
(734) 971-3335

Fax

(734) 971-3640

E-Mail

custserv@caymanchem.com

Web

www.caymanchem.com

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have any obligation or liability, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's exclusive remedy and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.

Copyright Cayman Chemical Company, 06/25/2013