

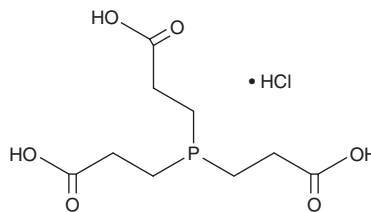
PRODUCT INFORMATION



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%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

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.

Description

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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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