

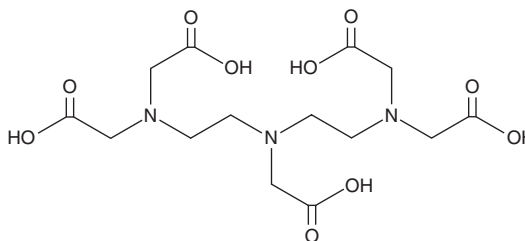
PRODUCT INFORMATION



DTPA

Item No. 33307

CAS Registry No.: 67-43-6
Formal Name: N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-glycine
Synonyms: Diethylenetriaminepentaacetic Acid, NSC 7340, Pentetic Acid
MF: C₁₄H₂₃N₃O₁₀
FW: 393.4
Purity: ≥95%
Supplied as: A 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

DTPA is supplied as a solid. A stock solution may be made by dissolving the DTPA in the solvent of choice, which should be purged with an inert gas. DTPA is slightly soluble in ethanol and methanol.

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 DTPA can be prepared by directly dissolving the solid in aqueous buffers. DTPA is slightly soluble in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

DTPA is a cell-impermeable metal chelating agent.^{1,2} It chelates copper, iron, zinc, and manganese, as well as calcium, magnesium, and plutonium.^{1,3} DTPA has been used as a metal chelating agent in the study of ferroptosis.⁴ It reduces the skeletal plutonium burden and incidence of bone tumors, as well as increases survival in a mouse model of intravenous plutonium exposure when administered at a dose of 500 mg/kg.³ Formulations containing DTPA conjugated to radioactive compounds have been used as diagnostic agents for brain imaging, renal visualization, and lung imaging.

References

1. Arts, J., Bade, S., Badrinas, M., *et al.* Should DTPA, an Aminocarboxylic acid (ethylenediamine-based) chelating agent, be considered a developmental toxicant? *Regul. Toxicol. Pharmacol.* **97**, 197-208 (2018).
2. Killilea, D.W., Atamna, H., Liao, C., *et al.* Iron accumulation during cellular senescence in human fibroblasts *in vitro*. *Antioxid. Redox Signal.* **5(5)**, 507-516 (2003).
3. Osenthal, M.W. and Lindenbaum, A. Influence of DTPA therapy on long-term effects of retained monomeric plutonium: Comparison with polymeric plutonium. *Radiat. Res.* **31(3)**, 506-521 (1967).
4. Wenzel, S.E., Tyurina, Y.Y., Zhao, J., *et al.* PEBP1 wards ferroptosis by enabling lipoxigenase generation of lipid death signals. *Cell* **171(3)**, 628-641 (2017).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/04/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM