



SIGMA-ALDRICH

3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Ethylenediaminetetraacetic acid disodium salt dihydrate ACS Reagent

Product Number **E 4884**

Store at Room Temperature

Exact replacement for Product Code 25,235-2

Product Description

Molecular Formula: $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$

Molecular Weight: 372.2

CAS Number: 6381-92-6

pK_a : 2.0, 2.7, 6.2, 10.3¹

Synonyms: EDTA, (Ethylenedinitrilo)tetraacetic acid

This product is designated as ACS Reagent grade, and meets the specifications of the American Chemical Society (ACS) for reagent chemicals.

EDTA is an inhibitor of metalloproteases, at effective concentrations of 1-10 μ M. EDTA acts as a chelator of the zinc ion in the active site of metalloproteases, and can also inhibit other metal ion-dependent proteases such as calcium-dependent cysteine proteases. EDTA may interfere with biological processes which are metal-dependent.²

For use as an anticoagulant, disodium or tripotassium salts of EDTA are most commonly used. The optimal concentration is 1.5 mg per ml of blood. EDTA prevents platelet aggregation and is, therefore, the preferred anticoagulant for platelet counts.³ Using a 2% EDTA solution, 1-2 drops per ml of whole blood can be used as an anticoagulant.

A procedure for a chromogenic assay for EDTA has been published.⁴

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is slowly soluble in water at room temperature up to 0.26 M, which is approximately 96 mg in a final volume of 1 ml. The pH of this solution will be in the range of 4 to 6. EDTA salts are more soluble in water as the pH increases: the more EDTA there is in the salt form, the higher the pH of a water solution, and therefore, the higher the room temperature solubility. This can be achieved by gradual addition of concentrated sodium hydroxide solution to the EDTA solution.

Storage/Stability

A stock solution of 0.5 M at pH 8.5 is stable for months at 4 °C.²

Solutions of EDTA may be autoclaved.

References

1. Data for Biochemical Research, 3rd ed., Dawson, R. M. C., et al., Oxford University Press (New York, NY: 1986), p. 404.
2. Proteolytic Enzymes, A Practical Approach, 2nd ed., Beynon, R. and Bond, J.S., Oxford University Press (Oxford, UK: 2001), p. 322.
3. Clinical Hematology: Principles, Procedures, Correlations. ed. Lotspeich-Steininger, C.A. et al., J.B. Lippincott (Philadelphia, PA: 1992), p. 18.
4. Sorensen, K., An Easy Microtiter Plate-based Chromogenic Assay for Ethylenediaminetetraacetic Acid and Similar Chelating Agents in Biochemical Samples. Anal. Biochem., **206(1)**, 210-211 (1992).

GCY/NSB 3/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.