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Product Information

Ethylenediaminetetraacetic acid disodium salt dihydrate SigmaUltra

Product Number **E1644**
Store at Room Temperature

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

Trace elemental analyses have been performed on the SigmaUltra EDTA. The certificate of analysis provides lot-specific results. SigmaUltra EDTA is for applications which require tight control of elemental content.

EDTA is an inhibitor of metalloproteases and metal-activated proteases, at effective concentrations of 1-10 μ M. The product acts as a chelator of the zinc ion in the active site of metalloproteases, but EDTA 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 From a 2% EDTA solution, 1-2 drops per ml of whole blood can be used as an anticoagulant.

A chromogenic assay for EDTA has been reported.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 approximately 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 a gradual addition of a concentrated sodium hydroxide solution to the EDTA solution.

Storage/Stability

A stock solution of 0.5 M EDTA 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/RXR 5/06

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