

## Product Information

### Ethylenediaminetetraacetic acid tetrasodium salt hydrate SigmaUltra

Catalog Number **E5391**  
Store at Room Temperature

Synonyms: EDTA tetrasodium salt hydrate

CAS Number: 194491-31-1  
64-02-8 (anhydrous)

Molecular Formula:  $C_{10}H_{12}N_2Na_4O_8 \cdot xH_2O$   
Molecular Weight: 380.17

Purity:  $\geq 99.0\%$

Solubility: a 0.1M solution in water at 20 °C yields a clear, colorless solution

pK<sub>a</sub>: 2.0, 2.7, 6.2, 10.3<sup>1</sup>

#### Product Description

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

EDTA is an inhibitor of metalloproteases, at effective concentrations of 1-10  $\mu$ 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.<sup>2</sup>

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.<sup>3</sup> 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 of EDTA has been published.<sup>4</sup>

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store at room temperature.

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

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., eds., Oxford University Press (Oxford, UK: 2001), p. 322.
3. Clinical Hematology: Principles, Procedures, Correlations. ed. Lotspeich-Steininger, C. A., et al., 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).

PHC 03/10-1

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