



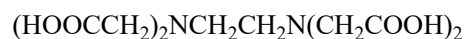
>>Entry Name: Ethylenediaminetetraacetic acid

ENTRY UNDER REVIEW

Synonym(s): *N,N'*-1,2-Ethanediybis[*N*-(carboxymethyl)]glycine, 9Cl. Ethylenedinitrilotetraacetic acid, 8Cl. EDTA. **Edetic acid**, BAN, INN. 3,6-Bis(carboxymethyl)-3,6-diazaoctanedioic acid. Versene acid. Sequestrene. Tetracemin. Complexone III. Versene. Clewat TAA. YD 30. Edathamil. Gluma Cleanser

CAS Registry Number: 60-00-4

Related CAS Registry Numbers(s): 7379-26-2 10378-23-1 17572-97-3 20824-56-0 23411-34-9 25102-12-9 58167-76-3 85715-60-2



Molecular Formula: C₁₀H₁₆N₂O₈

Molecular Weight: 292.245

Accurate Mass: 292.090668

Percentage Composition: C 41.10%; H 5.52%; N 9.59%; O 43.80%

Source/Synthesis: Manuf. by cyanomethylation of ethylenediamine with formaldehyde and sodium cyanide

Use/Importance: Acid and salts are powerful chelating agents for metal ions. Used as pharmaceutical aids in cases of poisoning etc. and as an excipient. Used as titrant in complexometric titrations of many metal ions; photometric detn. of Cr(III), Ni, Co; masking agent. Volumetric standard for detn. of Mg, Ca. Anticoagulant for blood samples

Physical Description: Dimorphic cryst. (H₂O)

Melting Point: Mp 220 dec.°

Solubility: Prac. insol. H₂O; insol. common org. solvs.

pKa Value: p*K*_{a1} 0.26; p*K*_{a2} 0.96; p*K*_{a3} 2.02; p*K*_{a4} 2.66; p*K*_{a5} 6.21; p*K*_{a6} 10.31 (20°, 0.1*M* KNO₃)

Calculated Log P Data: Log P –1.97 (calc)

Other Data: Starts to decarboxylate above 150°. Stable in boiling H₂O

Hazard & Toxicity: LD₅₀ (rat, ipr) 397 mg/kg. Exp. reprod. and teratogenic effects (large doses)

Aldrich: 25404-5

Fluka: 3620

Sigma: E6758

>>Derivative: Di-Na salt

Synonym(s): Edetate disodium, USAN. Disodium edetate, BAN. Chelaplex. Chelaplex III. Chelaton III. Chelest B

Extra CAS Registry Numbers(s): 139-33-3 6381-92-6 7379-28-4

Molecular Formula: C₁₀H₁₄N₂Na₂O₈

Molecular Weight: 336.209

Accurate Mass: 336.054552

Percentage Composition: C 35.72%; H 4.20%; N 8.33%; Na 13.68%; O 38.07%

Use/Importance: Metal chelating agent and veterinary anticoagulant. Used intravenously in treatment of hypercalcaemia

Physical Description: Cryst. + 2H₂O

Melting Point: Mp 252 dec.° (dihydrate)

Hazard & Toxicity: LD₅₀ (rat, orl) 2000 mg/kg

>>Derivative: Tri-Na salt

Synonym(s): Edetate trisodium, USAN. Trisodium edetate. Limclair. Sequestrene NA 3. Versene 9. Clewat 300A

CAS Registry Number: 150-38-9

Extra CAS Registry Numbers(s): 7379-28-4

Use/Importance: Chelating agent

Physical Description: Cryst. + 1H₂O (H₂O)

Melting Point: Mp 300° (monohydrate)

Hazard & Toxicity: LD₅₀ (rat, orl) 2150 mg/kg

Fluka: 3710