



>>Entry Name: Oxalic acid, 8CI

Synonym(s): Ethanedioic acid, 9CI. Clover acid

CAS Registry Number: 144-62-7

Related CAS Registry Numbers(s): 127-96-8 338-70-5 6100-20-5

Extra CAS Registry Numbers(s): 6153-56-6

HOOC-COOH

Molecular Formula: C₂H₂O₄

Molecular Weight: 90.035

Accurate Mass: 89.99531

Percentage Composition: C 26.68%; H 2.24%; O 71.08%

Biological Source: Occurs in many plants and vegetables, e.g. rhubarb leaves. Present in human tissues as an end-prod. of metab. Ca salt found in gallstones and is a cause of organ calcification. Manuf. by HNO₃ oxidation of carbohydrates, ethylene glycol or propene

Use/Importance: Widespread uses including metal treatment and cleaning and textile finishing, dye and paint industries and in polymers. Reagent for dehydrations and condensations. Used in pptn. separation of Ca, Sr, Ba, lanthanides; gravimetric detn. of Ca, Th, Pb, Ce; indirect manganometric detn. of Ca; masking agent for many metals in photometric detns. and as a reducing agent

Physical Description: Cryst. + 2H₂O (H₂O)

Melting Point: Mp 189.5° (anhyd. α-form). Mp 101.5° (dihydrate)

Solubility: V. sol. H₂O; mod. sol. EtOH; spar. sol. Et₂O

Density: d₄¹⁸ 1.65

pKa Value: pK_{a1} 1.23; pK_{a2} 3.85 (25°, H₂O)

Other Data: Hydrate dehydrates on heating and sublimes at 150-60°. Anhydrous acid exists as orthorhombic α-form and metastable monoclinic β-form

Hazard & Toxicity: Hg and Ag salts are explosive. Skin and severe eye irritant. Aq. solns. corrosive, and toxic by ingestion causing muscular tremors and convulsions. Acute poisoning can be fatal or result in acute renal failure. Salts are similarly toxic. OES: long-term 1 mg m⁻³; short-term 2 mg m⁻³

Aldrich: 31920-1

Fluka: 75706

Sigma: S1917

Supelco: R41-2375

>>Derivative: Mono-K salt

Synonym(s): Potassium binoxalate

CAS Registry Number: 127-95-7

Physical Description: Cryst. + 1H₂O

>>Derivative: Ce(III) salt

Synonym(s): Cerium oxalate

CAS Registry Number: 139-42-4

Biological Use/Importance: Antiemetic agent

>>Derivative: Mono-NH₄ salt

CAS Registry Number: 5972-72-5

Use/Importance: Ink stain remover

Physical Description: Cryst. + 1H₂O

>>Derivative: Di-NH₄ salt

CAS Registry Number: 1113-38-8

Extra CAS Registry Numbers(s): 6009-70-7 14258-49-2

Melting Point: Mp 133 dec.° (monohydrate)

Hazard & Toxicity: Toxic

Sigma: O8751

>>Derivative: Mono-Me ester