



>>Entry Name: 1,2-Ethanediol, 9CI

Synonym(s): Ethylene glycol, 8CI. Glycol

CAS Registry Number: 107-21-1

HOCH₂CH₂OH

Molecular Formula: C₂H₆O₂

Molecular Weight: 62.068

Accurate Mass: 62.03678

Percentage Composition: C 38.70%; H 9.74%; O 51.55%

Biological Source: Present in bound form (15%) in the lipids of the starfish *Distolasterias nipon*

Use/Importance: Important component of antifreeze and hydraulic brake fluids. Used as solvent, stabiliser and softening agent. Also used in manuf. of explosives, waxes, fibres etc. Monomer and comonomer used in the manuf. of alkyd resins, polyurethanes, polyesters, esp. poly(ethylene terephthalate), and many other polymeric systems. Used in resin curing processes. Dissolves NaOH and KOH. Reagent for ethylene ketal prep. Important industrial chemical, 30th in order of volume for USA in 1994 (production 2.77 million tons/year)

Physical Description: Colourless, viscous liq. with sweet taste

Melting Point: Mp -15.6°

Boiling Point: Bp 197°. Bp₃ 70°

Solubility: Misc. H₂O, EtOH, MeOH, Me₂CO, AcOH, Py. Immisc. CHCl₃, CCl₄, Et₂O, C₆H₆, CS₂, petrol

Density: d₄²⁰ 1.108811

pKa Value: pK_a 15.4 (25°)

Refractive Index: n_D²⁰ 1.9310

Hazard & Toxicity: Fl. p. 111°, autoignition temp. 398°. Human systemic effects by ingestion and inhalation. Affects CNS and kidney function. Skin, eye and mucous membrane irritant. LD₅₀ (rat, orl) 4700 mg/kg. Exp. reprod. and teratogenic effects (large doses). OES: long-term 10 mg m⁻³ (particulate); long-term 60 mg m⁻³; short-term 125 mg m⁻³ (vapour)

Aldrich: 29323-7

Fluka: 3770

Sigma: E9129

>>Derivative: Dinitrate

see 1,2-Ethanediol dinitrate, [BFR53-Q](#)

>>Derivative: Diformyl

CAS Registry Number: 629-15-2

Molecular Formula: C₄H₆O₄

Molecular Weight: 118.089

Accurate Mass: 118.02661

Percentage Composition: C 40.68%; H 5.12%; O 54.19%

Boiling Point: Bp₆₆₀ 172°

>>Derivative: Mono-Ac

Synonym(s): 2-Hydroxyethyl acetate

CAS Registry Number: 542-59-6

Molecular Formula: C₄H₈O₃

Molecular Weight: 104.105

Accurate Mass: 104.047345

Percentage Composition: C 46.15%; H 7.75%; O 46.11%

Use/Importance: Volatile plasticiser

Physical Description: Liq.

Boiling Point: Bp 187-189°

Solubility: Misc. EtOH, H₂O

Hazard & Toxicity: Fl. p. 102°. Eye irritant. LD₅₀ (rat, orl) 8250 mg/kg

Aldrich: 29276-1

Fluka: 811