



>>Entry Name: Pentanedial, 9CI

ENTRY UNDER REVIEW

Synonym(s): Glutaraldehyde. **Glutaral**, INN, USAN. Aldesan. Alhydex. Bactron K31. Cidex. Diswart. Gludesin. Glutaclean. Glutarex 28. Glutarol. Hospex. Sonacide. Sporidicin. Ucarcide. Verucasep. Virsal

CAS Registry Number: 111-30-8

OHCCCH₂CH₂CH₂CHO

Molecular Formula: C₅H₈O₂

Molecular Weight: 100.117

Accurate Mass: 100.05243

Percentage Composition: C 59.98%; H 8.05%; O 31.96%

Use/Importance: Intermed. in classical synth. of pseudopelletierine. Used in tanning of leather. Cross-linking agent for polymers

Biological Use/Importance: Disinfectant active against gram-positive and gram-negative bacteria, *Mycobacterium tuberculosis*, and some viruses incl. HIV

Physical Description: Oil

Melting Point: Mp -14°

Boiling Point: Bp 188° dec.. Bp₁₀ 71-72°

Solubility: Sol. H₂O, EtOH

Refractive Index: n_D²⁰ 1.4200

Calculated Log P Data: Log P -0.61 (calc)

Other Data: Polymerises in presence of H₂O → glassy polymer which on dist. *in vacuo* regenerates the dialdehyde. Usually sold as a 50% or 25% aq. soln. Vp 17 mmHg (20°). Spontaneous or catalytic polym. gives a copolymer of a cyclic struct. and an open chain struct.

Hazard & Toxicity: Symptoms from prolonged or repeated (occup.) exposure incl. nausea, headache, eye, skin and respiratory tract irritation. Can cause asthma and dermatitis. LD₅₀ (rat, oral) 134 mg/kg. OES: short-term 0.2 ppm

Aldrich: W51230-3

Fluka: 49630

Sigma: G6403

>>Derivative: Dioxime

CAS Registry Number: 6635-57-0

Molecular Formula: C₅H₁₀N₂O₂

Molecular Weight: 130.146

Accurate Mass: 130.074228

Percentage Composition: C 46.14%; H 7.74%; N 21.52%; O 24.59%

Physical Description: Needles (H₂O)

Melting Point: Mp 178°

Other Data: Subl. without dec.

Rare Chemicals Library: S35017-6

>>Derivative: Mono-2,4-dinitrophenylhydrazone

CAS Registry Number: 81591-72-2

Melting Point: Mp 193.7-194.7°

>>Derivative: Bis-2,4-dinitrophenylhydrazone

CAS Registry Number: 5085-07-4

Melting Point: Mp 185°

Aldrich: 43112-5

Supelco: R47-5545

>>Derivative: Di-Me acetal

Synonym(s): 5,5-Dimethoxypentanal, 9CI

CAS Registry Number: 50789-30-5

Molecular Formula: C₇H₁₄O₃

Molecular Weight: 146.186

Accurate Mass: 146.094295

Percentage Composition: C 57.51%; H 9.65%; O 32.83%

Physical Description: Liq.

Boiling Point: Bp₅ 80-82°