



>>Entry Name: Potassium oxalate

Synonym(s): Oxalic acid, dipotassium salt, 8CI. Ethanedioic acid, dipotassium salt, 9CI

CAS Registry Number: 583-52-8

Extra CAS Registry Numbers(s): 10043-22-8

$K_2(C_2O_4)$

Molecular Formula: $C_2K_2O_4$

Molecular Weight: 166.216

Accurate Mass: 165.907074

Percentage Composition: C 14.45%; K 47.05%; O 38.50%

Source/Synthesis: Synth. by reaction of KOH with aq. oxalic acid, cryst. as monohydrate which dehydrates at = 100°

Physical Description: Hygroscopic colourless orthorhombic cryst. Becomes tetragonal at 381°. Dec. above 470° to CO and K_2CO_3

Other Data: ΔH_f° -1342 kJ mol⁻¹

>>Derivative: Monohydrate

CAS Registry Number: 6487-48-5

Molecular Formula: $C_2H_2K_2O_5$

Molecular Weight: 184.231

Accurate Mass: 183.917639

Percentage Composition: C 13.04%; H 1.09%; K 42.44%; O 43.42%

Source/Synthesis: Commercially available. Cryst. from aq. solns. of $K_2C_2O_4$

Physical Description: White monoclinic cryst.; hygroscopic. Dec. on heating with H₂O loss (-H₂O at = 100°)

Solubility: V. sol. H₂O (33 g per 100 cm³ at 16°)

Other Data: ΔH_f° -1641 kJ mol⁻¹

Hazard & Toxicity: Irritant

Aldrich: 22342-5

Fluka: 60426

Sigma: O0501

References:

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1287D, (ir)

Graddon, D.P., *Chem. Ind. (London)*, 1956, 80, (uv)

Collman, J.P. *et al.*, *J.A.C.S.*, 1958, **80**, 2054, (ir)

Pedersen, B.F., *Acta Chem. Scand.*, 1964, **18**, 1635, (struct, monohydrate)

Bardet, L. *et al.*, *C. R. Hebd. Seances Acad. Sci. Ser. B*, 1967, **265**, 983, (ir, Raman)

Sequeira, A. *et al.*, *Acta Cryst. B*, 1970, **26**, 77, (monohydrate, struct)

Hiyashiyama, T. *et al.*, *Bull. Chem. Soc. Jpn.*, 1971, **44**, 1727, (polymorphs, struct)

Verdonk, A.H., *Therm. Anal., Proc. Int. Conf., 3rd, 1971 (1972)*, 1971, **2**, 651; *CA*, 1973, **78**, 131588, (thermal dec, monohydrate)

Fabbri, G. *et al.*, *CA*, 1977, **86**, 182308, (thermal dec)

Eriksson, A. *et al.*, *Acta Chem. Scand., Ser. A*, 1978, **32**, 737, (ir, monohydrate)

Ebisuzaki, Y. *et al.*, *J. Raman Spectrosc.*, 1981, **11**, 306, (Raman, monohydrate)

Ratcliffe, C.I. *et al.*, *Chem. Phys. Lett.*, 1985, **120**, 427, (pmr, monohydrate)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2907A, (haz)