



>>Entry Name: Dipotassium phosphate, 9CI, 8CI

ENTRY UNDER REVIEW

Synonym(s): Dipotassium monohydrogenphosphate. Potassium phosphate (K_2HPO_4). Potassium phosphate dibasic, JAN, USAN

CAS Registry Number: 7758-11-4

Extra CAS Registry Numbers(s): 16068-46-5

Type of Compound Code(s): WC2800 WC4600 WC1100 XA4930 XA2625

K_2HPO_4

Molecular Formula: HK_2O_4P

Molecular Weight: 174.176

Accurate Mass: 173.888661

Percentage Composition: H 0.58%; K 44.90%; O 36.74%; P 17.78%

Source/Synthesis: Synth. from $H_3PO_4 + KOH$ or K_2CO_3

Use/Importance: Fertiliser, fire-proofing agent; buffer for electroplating. Calcium regulator, cathartic. Used to treat hypophosphataemia

Physical Description: Deliquescent white powder

Solubility: V. sol. H_2O (167 g per 100 cm^3 at 20°); v. sol. EtOH

Other Data: Undergoes a phase change at $315\text{--}320^\circ$ (311°), dec. $\rightarrow$ Potassium diphosphate ($K_4(P_2O_7)$) [HTW33-R](#) at $400\text{--}450^\circ$

Aldrich: 45020-0

Fluka: 60353

Sigma: P9692

>>Derivative: Trihydrate

CAS Registry Number: 16788-57-1

Use/Importance: Commercially available

Physical Description: Colourless cryst.

Melting Point: Mp 53° (48°) (incongr.)

Other Data: Loses H_2O at ca. 110° (1 H_2O), 132° (1 H_2O), and 158° (1 H_2O). A hexahydrate has also been reported

Aldrich: 22131-7

Sigma: P0562

References:

- Aldrich Library of FT-IR Spectra*, 1st edn., 1985, **2**, 1267D, (ir)
Peterson, S.W. *et al.*, *Acta Cryst.*, 1953, **6**, 273, (nd)
Miller, F.A. *et al.*, *Spectrochim. Acta*, 1960, **16**, 135, (ir)
Steger, E. *et al.*, *Z. Anorg. Allg. Chem.*, 1964, **331**, 169, (ir, Raman)
McDonald, J.L. *et al.*, *J. Dent. Res.*, 1970, **49**, 1042, (metab)
Pelavin, M. *et al.*, *J. Phys. Chem.*, 1970, **74**, 1116, (pe)
Marshall, W.L. *et al.*, *J. Inorg. Nucl. Chem.*, 1981, **43**, 449
Radzhnabov, R., *CA*, 1982, **96**, 45312, (dta, ir, trihydrate)
Turner, G.L. *et al.*, *J. Magn. Reson.*, 1986, **70**, 408, (P-31 nmr)
Mudrakovskii, I.L. *et al.*, *J. Phys. Chem. Solids*, 1986, **42**, 335, (P-31 nmr)
Baran, J. *et al.*, *J. Mol. Struct.*, 1989, **195**, 159, (ir, cryst struct)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 858
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2311-2313