



>>Entry Name: Potassium phosphate (K_3PO_4)

ENTRY UNDER REVIEW

Synonym(s): Tripotassium phosphate, 9CI, 8CI. Potassium orthophosphate (K_3PO_4)

CAS Registry Number: 7778-53-2

Related CAS Registry Numbers(s): 27176-09-6 27176-10-9 36563-87-8 36563-88-9 39041-45-7 62770-61-0

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

K_3PO_4

Molecular Formula: K_3O_4P

Molecular Weight: 212.266

Accurate Mass: 211.844543

Percentage Composition: K 55.26%; O 30.15%; P 14.59%

Source/Synthesis: Synth. from $KO_2 + P_4O_{10}$ at $320^\circ \rightarrow 920^\circ$

Use/Importance: Drying agent for basic compounds and their solns. Component of fertilisers

Physical Description: Colourless hygroscopic powder

Solubility: V. sol. H_2O

Other Data: $\Delta H_f^\circ -1949 \text{ kJ mol}^{-1}$

Aldrich: 34076-6

Fluka: 60492

Sigma: P5629

>>Derivative: Sesquihydrate

CAS Registry Number: 22763-04-8

Source/Synthesis: Synth. by heating the trihydrate at $110-130^\circ$

>>Derivative: Trihydrate

CAS Registry Number: 22763-03-7

Source/Synthesis: Cryst. normally at r.t. from satd. soln.

Other Data: *In vacuo* at $20^\circ \rightarrow 1.5$ hydrate. At $300^\circ \rightarrow$ anhyd. salt

>>Derivative: Heptahydrate

CAS Registry Number: 22763-02-6

Source/Synthesis: Synth. by gassing satd. aq. soln. with NH_3 at 0°

Other Data: Additionally reported hydrates include the hemihydrate, the monohydrate, and the tetrahydrate

>>Derivative: Tetrakis- H_2O_2 complex

CAS Registry Number: 36563-86-7

Source/Synthesis: Obt. from heptahydrate and 65% H_2O_2 aq.

Other Data: Dec. at ca. 90° . *In vacuo* over P_4O_{10} 1:1 and 1:2 complexes

References:

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