



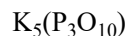
>>Entry Name: Potassium triphosphate ($K_5(P_3O_{10})$)

ENTRY UNDER REVIEW

Synonym(s): Potassium tripolyphosphate. Pentapotassium triphosphate, 9CI, 8CI

CAS Registry Number: 13845-36-8

Related CAS Registry Numbers(s): 24315-83-1



Molecular Formula: $K_5O_{10}P_3$

Molecular Weight: 448.407

Accurate Mass: 447.688971

Percentage Composition: K 43.60%; O 35.68%; P 20.72%

Source/Synthesis: Synth. from $2K_2HPO_4 + KH_2PO_4$ at 400-500°, or from $KPO_3 + K_2CO_3$ at 750-900°

Use/Importance: Texturizer and sequestrant in foods, mainly as the K/Na double salt

Physical Description: Hygroscopic colourless solid

Melting Point: Mp 625-630° (incongr.)

Solubility: V. sol. H_2O

Other Data: In addition to hydrates, forms adducts with H_2O_2

>>Derivative: Dihydrate (α -form)

Source/Synthesis: Synth. by slow evap. of aq. soln. *in vacuo*, or by exp. of anhydrous salt to atmospheric moisture

Physical Description: Colourless cryst

>>Derivative: Dihydrate (β -form)

CAS Registry Number: 66904-52-7

Source/Synthesis: Synth from aq. soln. with EtOH

Physical Description: Colourless cryst.

>>Derivative: Tetrahydrate

CAS Registry Number: 53171-31-6

Other Data: Thought to exist in two (α , β) modifications. Yields the dihydrate when heated and in dry air at 400-450° is completely dehydrated

References:

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Malashonok, I.E. *et al.*, *Zh. Neorg. Khim.*, 1988, **33**, 3049; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1988, **33**, 1758, (ir, Raman)

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