



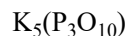
>>Entry Name: Potassium triphosphate ( $K_5(P_3O_{10})$ )

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 ( $\alpha$ -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 ( $\beta$ -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 ( $\alpha$ , $\beta$ ) modifications. Yields the dihydrate when heated and in dry air at 400-450° is completely dehydrated

References:

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