



>>Entry Name: Potassium diphosphate ($K_4(P_2O_7)$)

ENTRY UNDER REVIEW

Synonym(s): Tetrapotassium pyrophosphate, 8Cl. Tetrapotassium diphosphate, 9Cl

CAS Registry Number: 7320-34-5

$K_4(P_2O_7)$

Molecular Formula: $K_4O_7P_2$

Molecular Weight: 330.336

Accurate Mass: 329.766757

Percentage Composition: K 47.34%; O 33.90%; P 18.75%

Use/Importance: Main use is as a constituent of liq. detergents

Solubility: V. sol. H_2O (187 g per 100 cm^3 at 25°)

Other Data: Dec. v. rapidly at 1300° . Forms adduct with H_2O_2

Aldrich: 32243-1

Fluka: 60236

Sigma: P8260

>>Derivative: Monohydrate

Source/Synthesis: Said to be formed on drying the trihydrate at 27° in atmosphere of 15% rel. humidity

>>Derivative: Trihydrate

CAS Registry Number: 7790-67-2

Source/Synthesis: Synth. by addition of Me_2CO to 40% aq. soln. of the salt

Physical Description: Colourless cryst. (elongated rods)

Other Data: Monoclinic cell with anion in staggered conformn. P-O(P) 162.3, 164.9, P-O_{term.} 150.3 pm. POP 130.3° . K 7 or 8 coordinate

>>Derivative: Tetrahydrate

CAS Registry Number: 41159-38-0

Physical Description: Monoclinic cryst.

>>Variant: α -form

Synonym(s): High temp.-form

Molecular Formula: $K_4O_7P_2$

Molecular Weight: 330.336

Accurate Mass: 329.766757

Percentage Composition: K 47.34%; O 33.90%; P 18.75%

Source/Synthesis: Synth. by heating K_2HPO_4 at 500° or by dehydration of the trihydrate at 105°

Physical Description: V. hygroscopic, colourless solid

Other Data: Stable at r.t.

>>Variant: β -form

Synonym(s): Low temp.-form

Molecular Formula: $K_4O_7P_2$

Molecular Weight: 330.336

Accurate Mass: 329.766757

Percentage Composition: K 47.34%; O 33.90%; P 18.75%

Source/Synthesis: Synth. by heating K_2HPO_4 at 400°

Physical Description: V. hygroscopic, colourless solid

Other Data: Stable at r.t. Transforms into α -form at 500°

References: