



>>Entry Name: Sodium thiophosphate (Na₃(PO₃S))

Synonym(s): Trisodium phosphorothioate, 9Cl, 8Cl. Trisodium monothiophosphate

CAS Registry Number: 10101-88-9

Na₃[PO₃S]

Molecular Formula: Na₃O₃PS

Molecular Weight: 180.007

Accurate Mass: 179.899878

Percentage Composition: Na 38.31%; O 26.66%; P 17.21%; S 17.81%

Source/Synthesis: Synth. by dehydration of dodecahydrate over P₂O₅ *in vacuo*, or of nonahydrate at 790°

Physical Description: Cryst. solid

Solubility: Sol. cold H₂O (13.3 g per 100 cm³ at 28°), more sol. hot H₂O

Other Data: Dec. at 300° *in vacuo*

>>Derivative: Nonahydrate

CAS Registry Number: 51674-18-1

Source/Synthesis: Synth. by dehydration of dodecahydrate over H₂SO₄

Melting Point: Mp 62-64°

Other Data: Monoclinic. Loses 9H₂O at 79°

>>Derivative: Dodecahydrate

CAS Registry Number: 51674-17-0

Source/Synthesis: Synth. from PSCl₃ + NaOH aq. or NaOH aq. + P₄S₁₀. Also from the trisilver salt and NaCl aq.

Physical Description: Hexagonal flakes

Melting Point: Mp 60°

Solubility: V. sol. hot H₂O

Other Data: Effloresces in air. Hexagonal unit cell with discrete [PO₃S]³⁽⁻⁾ and (Na₃)³⁽⁺⁾(OH₂)₁₂ groups. Slowly evolves H₂S in air. Dec. rapidly at 60°

Aldrich: 37812-7

Fluka: 72045

References:

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