



>>Entry Name: Ammonium phosphate ((NH₄)₃PO₄)

Synonym(s): Triammonium phosphate, 9Cl, 8Cl. Triammonium orthophosphate

CAS Registry Number: 10361-65-6

Extra CAS Registry Numbers(s): 10124-31-9

(NH₄)₃PO₄

Molecular Formula: H₁₂N₃O₄P

Molecular Weight: 149.086

Accurate Mass: 149.056544

Percentage Composition: H 8.11%; N 28.19%; O 42.93%; P 20.78%

General Statement: Thermally the least stable ammonium orthophosphate

>>Derivative: Trihydrate

Synonym(s): Ammonium phosphate trihydrate

CAS Registry Number: 25447-33-0

Molecular Formula: H₁₈N₃O₇P

Molecular Weight: 203.132

Accurate Mass: 203.088239

Percentage Composition: H 8.93%; N 20.69%; O 55.13%; P 15.25%

Source/Synthesis: Synth. from Ammonium phosphate ((NH₄)₂HPO₄) [HTM76-I](#) + NH₃ aq.

Physical Description: Colourless plates, prisms, or needles

Melting Point: Mp 60° (incongr.)

Solubility: Sol. H₂O

Other Data: Readily loses NH₃

References:

Thompson, H.L. *et al.*, *Ind. Eng. Chem.*, 1950, **42**, 2176, (*props*)

Margulis, E.V. *et al.*, *Zh. Prikl. Khim. (Leningrad)*, 1966, **39**, 2364; *J. Appl. Chem. USSR (Engl. Transl.)*, 1966, **39**, 2216, (*props*)

Nabiev, M.N. *et al.*, *Zh. Neorg. Khim.*, 1969, **14**, 2950; *Russ. J. Inorg. Chem. (Engl. Transl.)*, 1969, **14**, 1556, (*props*)

Mootz, D. *et al.*, *Acta Cryst. B*, 1970, **26**, 1826, (*synth, cryst struct*)

Hamann, S.D., *Aust. J. Chem.*, 1978, **31**, 11, (*ir*)

Mudrakovskii, I.L. *et al.*, *J. Phys. Chem. Solids*, 1986, **47**, 335, (*P-31 nmr*)