



>>Entry Name: Ammonium magnesium phosphate (1:1:1), 9Cl, 8Cl

Synonym(s): Phosphoric acid, ammonium magnesium salt (1:1:1), 8Cl

CAS Registry Number: 7785-21-9

Related CAS Registry Numbers(s): 19004-55-8

Mg(NH₄)PO₄

Molecular Formula: H₄MgNO₄P

Molecular Weight: 137.315

Accurate Mass: 136.972838

Percentage Composition: H 2.94%; Mg 17.70%; N 10.20%; O 46.61%; P 22.56%

General Statement: The anhydrous salt does not appear to have been obtained. Occurs as hexahydrate

Source/Synthesis: Synth. from Mg(OH)₂-H₃PO₄-NH₄OH and Na₃PO₄-MgSO₄-NH₄OH. Also MgHPO₄ + NH₃. Occurs in human urinary calculi, and also guano

Use/Importance: Precipitated during course of gravimetric estimation of Mg. Ignited to Mg₂P₂O₇. Agricultural fertiliser

Physical Description: Amorph. powder

Other Data: A trihydrate has been reported

Fluka: 9884

>>Derivative: Monohydrate

CAS Registry Number: 16674-60-5

Source/Synthesis: Obt. from hexahydrate at 80-100°. May be cryst. from aq. solns. containing MgCl₂ and [NH₄]H₂PO₄

Solubility: Sol. acids; prac. insol. H₂O (0.023 g per 100 cm³ at 0°), (0.02 g per 100 cm at 80°); insol. EtOH

Other Data: Stable below 130-150°

>>Derivative: Hexahydrate

CAS Registry Number: 13478-16-5

Physical Description: White powder or elongated platelets

Other Data: Orthorhombic with regular PO₄³⁽⁻⁾ tetrahedra and distorted Mg(H₂O)₆²⁽⁺⁾ octahedra. A slurry in H₂O at 95° → the monohydrate. When heated dry, loses H₂O and NH₃ in three overlapping processes

>>Variant: Mineral-form

Synonym(s): Struvite. Guanite

CAS Registry Number: 15490-91-2

Molecular Formula: H₄MgNO₄P

Molecular Weight: 137.315

Accurate Mass: 136.972838

Percentage Composition: H 2.94%; Mg 17.70%; N 10.20%; O 46.61%; P 22.56%

General Statement: Essentially the hexahydrate

Source/Synthesis: Found in human urinary sediments; peat beds; phosphate caves; diatomites, and bird and bat guano deposits in Chile and Australia. Associated with Newberyite and Brushite

Physical Description: Colourless to pale yellowish-brown, transparent to translucent, brittle, bipyramidal cryst.

References:

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