>> **Name: Ammonium magnesium phosphate (1:1:1),** 9CI, 8CI
Synonym(s): Phosphoric acid, ammonium magnesium salt (1:1:1), 8CI

CAS Registry Number: 7785-21-9
Related CAS Registry Numbers(s): 19004-55-8
$Mg(NH_4)PO_4$

Molecular Formula: H_4MgNO_4P
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%

Source/Synthesis: Synth. from $Mg(OH)_2$-H_3PO_4-NH_4OH and Na_3PO_4-$MgSO_4$-NH_4OH. Also $MgHPO_4 + NH_3$. Occurs in human urinary calculi, and also guano
Use/Importance: Precipitated during course of gravimetric estimation of Mg. Ignited to $Mg_2P_2O_7$. 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 $MgCl_2$ and $[NH_4]H_2PO_4$
Solubility: Sol. acids; prac. insol. H_2O (0.023 g per 100 cm^3 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 $PO_4^{3(-)}$ tetrahedra and distorted $Mg(H_2O)_6^{2(+)}$ octahedra. A slurry in H_2O at 95° → the monohydrate. When heated dry, loses H_2O and NH_3 in three overlapping processes

>>**Variant:** Mineral-form
Synonym(s): Struvite. Guanite

CAS Registry Number: 15490-91-2
Molecular Formula: H_4MgNO_4P
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%

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.

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