>>**Entry Name: Aluminium phosphate (1:1),** 9CI, 8CI, USAN
Synonym(s): Aluminium orthophosphate. Phosphaljel

CAS Registry Number: 7784-30-7
Extra CAS Registry Numbers(s): 13765-93-0 98499-64-0

$AlPO_4$

Molecular Formula: AlO_4P
Molecular Weight: 121.953
Accurate Mass: 121.934961
Percentage Composition: Al 22.12%; O 52.48%; P 25.40%
General Statement: Exists in various mineral and polymorphic forms. Forms acid salts with H_3PO_4, and intercalation compds. with e.g. org. bases
Use/Importance: Forms basis of numerous microporous compositions with zeolitic character. A wide range of other elements may be incorporated. Employed as refractory material e.g. in binders and in bricks. With other metal oxides forms highly coloured materials useful as pigments. Employed in some dental and pharmaceutical prepns. Antacid. Commercially available

Aldrich: 34145-2
Fluka: 6414
Sigma: A1702

>>**Derivative:** Sesquihydrate

CAS Registry Number: 99835-04-8
Physical Description: Square prismatic needles
Other Data: Orthorhombic lattice with linked AlO_4 and PO_4 tetrahedra and $AlO_4(H_2O)_2$ octahedra and encapsulated H_2O

>>**Derivative:** Dihydrate

CAS Registry Number: 13477-75-3
Source/Synthesis: Synth. from NaH_2PO_4, $AlCl_3$, aq. NaOH, pH 3.8 at 60-90° → Variscite. $Al_2(SO_4)_3$ + aq. Na_3PO_4 at <135° → Metavariscite
Physical Description: Normally minute hexagonal plates

>>**Derivative:** Trihydrate

CAS Registry Number: 22784-12-9
Physical Description: Colourless, elongated hexagonal plates
Other Data: Dehydrates at <400° → cristobalite form

>>**Derivative:** Compd. with $[NMe_4]OH$
Synonym(s): $AlPO_4$ - 12TMAU

CAS Registry Number: 104422-12-0
Molecular Formula: $C_4H_{13}Al_3NO_{13}P_3$
Molecular Weight: 457.011
Accurate Mass: 456.904597
Percentage Composition: C 10.51%; H 2.87%; Al 17.71%; N 3.06%; O 45.51%; P 20.33%
Source/Synthesis: Obtained hydrothermally at 200°
Physical Description: White cryst.

>>**Derivative:** Compd. with ethylenediamine (3:1) + $1H_2O$
Synonym(s): $AlPO_4$21(en)

CAS Registry Number: 96360-79-1
Molecular Formula: $C_2H_{10}Al_3N_2O_{13}P_3$
Molecular Weight: 443.972
Accurate Mass: 443.884196
Percentage Composition: C 5.41%; H 2.27%; Al 18.23%; N 6.31%; O 46.85%; P 20.93%
Source/Synthesis: Obt. hydrothermally at 200°
Physical Description: White cryst. + $1H_2O$
Other Data: Formulated as $Al_3(PO_4)_3(H_2NCH_2CH_2NH_2).H_2O$