



>>Entry Name: Iron phosphate (FePO₄)

ENTRY UNDER REVIEW

Synonym(s): Iron(3+) phosphate (1:1), 9Cl, 8Cl. Ferric phosphate. Ferric orthophosphate

CAS Registry Number: 10045-86-0

Related CAS Registry Numbers(s): 22047-20-7 51833-68-2 58694-82-9 111672-13-0

Extra CAS Registry Numbers(s): 10402-24-1 31096-47-6 58782-48-2

FePO₄

Molecular Formula: FeO₄P

Molecular Weight: 150.818

Accurate Mass: 150.888361

Percentage Composition: Fe 37.03%; O 42.43%; P 20.54%

Source/Synthesis: Synth. from Fe₂O₃ + H₃PO₄ at 793°, 38 mm Hg pressure followed by dehydration at 523°

Use/Importance: Commercially available. Fertiliser. Used in deodorants, catalysts, anticorrosion coatings

Biological Use/Importance: Dietary supplement. Molluscicide

Other Data: Shows transition at 17K between two antiferromagnetic phases

Hazard & Toxicity: LD₅₀ (rat, orl) >5000 mg/kg

>>Derivative: Dihydrate

CAS Registry Number: 13463-10-0

Source/Synthesis: Synth. from Fe(OH)₃, FeCl₃ aq., or Fe₂O₃ + H₃PO₄

Other Data: Three forms recognised. These are dehydrated at 160-350° → three cryst. phases (I-III). Further heating produces a quartz-like phase (from I) and a tridymite-like phase (from II)

Aldrich: 43601-1

>>Derivative: 2.5 Hydrate

Physical Description: Amorphous solid or deep lilac, minute hexagonal plates

Other Data: Dehydrated at 80-480° → amorphous phase

>>Variant: A-form

Molecular Formula: FeO₄P

Molecular Weight: 150.818

Accurate Mass: 150.888361

Percentage Composition: Fe 37.03%; O 42.43%; P 20.54%

Source/Synthesis: Synth. by heating FePO₄.xH₂O to 1300° or Fe₂O₃ + (NH₄)₂HPO₄ at 900°

Physical Description: Irregular spheres

>>Variant: B-form

Molecular Formula: FeO₄P

Molecular Weight: 150.818

Accurate Mass: 150.888361

Source/Synthesis: Synth. by heating form I at 850° under high pressure

Other Data: Antiferromagnetic at 4K

>>Variant: Mineral-form

Synonym(s): Phosphosiderite

CAS Registry Number: 14567-75-0

Molecular Formula: FeO₄P

Molecular Weight: 150.818

Accurate Mass: 150.888361

Percentage Composition: Fe 37.03%; O 42.43%; P 20.54%

Source/Synthesis: Occurs widely in Europe, USA, S.W. Africa and S. America

>>Variant: Mineral-form

Synonym(s): Strengite