



>>Entry Name: Iron phosphides

Molecular Formula: [FeP]

>>Variant: Iron phosphide (Fe₃P)

Synonym(s): Triiron phosphide

CAS Registry Number: 12023-53-9

Molecular Formula: Fe₃P

Molecular Weight: 198.515

Accurate Mass: 198.778579

Percentage Composition: Fe 84.40%; P 15.60%

Use/Importance: Additive to (stainless) steel. Alloy glass. Forms phosphide eutectic phases in P cast irons

Physical Description: Grey

Melting Point: Mp 1100°

Solubility: Insol. H₂O

>>Variant: Iron phosphide (Fe₂P)

Synonym(s): Diiron phosphide

CAS Registry Number: 1310-43-6

Molecular Formula: Fe₂P

Molecular Weight: 142.668

Accurate Mass: 142.84364

Percentage Composition: Fe 78.29%; P 21.71%

Source/Synthesis: Synth. from Fe + red P or by electrolytic polarisation of Fe in NaPO₃ melt

Use/Importance: Used in steel manuf., in pigments and in paint for corrosion protection eg. in zinc-rich primers

Physical Description: Blue-grey powder

Melting Point: Mp 1290°

Solubility: Insol. H₂O, acid

Other Data: Evolves PH₃ with acid or H₂O. Ferromagnetic

>>Variant: Iron phosphide (FeP)

CAS Registry Number: 26508-33-8

Molecular Formula: FeP

Molecular Weight: 86.821

Accurate Mass: 86.908701

Percentage Composition: Fe 64.32%; P 35.68%

Source/Synthesis: Synth. by electrolytic polarisation of Fe in NaPO₃ melt or by combination of elements

Use/Importance: Catalyst for alkene isomerism. Used for improving welding and bending props. of steel

>>Variant: Iron phosphide (FeP₂)

CAS Registry Number: 12022-85-4

Molecular Formula: FeP₂

Molecular Weight: 117.794

Accurate Mass: 117.882463

Percentage Composition: Fe 47.41%; P 52.59%

Source/Synthesis: Obt. by electrolytic polarisation of Fe in NaPO₃ melt

Use/Importance: Antistatic agent in ferrite recording tapes

>>Variant: Iron phosphide (FeP₄)

CAS Registry Number: 68825-13-8

Molecular Formula: FeP₄

Molecular Weight: 179.742

Accurate Mass: 179.829987

Percentage Composition: Fe 31.07%; P 68.93%

Source/Synthesis: Synth. from elements at 6 x 10⁴ atm.

References: