



>>Entry Name: Triphenylphosphine

CAS Registry Number: 603-35-0

Ph₃P

Molecular Formula: C₁₈H₁₅P

Molecular Weight: 262.29

Accurate Mass: 262.091137

Percentage Composition: C 82.43%; H 5.76%; P 11.81%

Use/Importance: Nucleophile with many synthetic uses; deoxygenating and desulfurising reagent, reagent for alkene synth. by double extrusion. Converted by alkyl halides into quaternary triphenylphosphonium salts used to prepare ylides for Wittig reactions. Reagent for the deoxygenation of nitroso and nitro compds.(often with the formn. of *N*-containing heterocyclic compds.), oxiranes and peroxides, and for the desulfurization of thiiranes and di- and polysulfides. Reagent for the dehalogenation of 1,2-dihalogenoalkanes. Used in conjunction with CCl₄ or CBr₄ to convert alcohols into alkyl chlorides or bromides, and carboxamides into nitriles. Used in conjunction with diethyl azodicarboxylate in phosphorylations. Used for extraction separation of Ag; photometric detn. of NH₃; extraction-photometric detn. of Pd (PdCl₄²⁽⁻⁾ associated with the reagent). Reference material used in elemental microanalysis

Physical Description: Plates or prisms (Et₂O)

Melting Point: Mp 80°

Boiling Point: Bp 360° (under N₂)

Other Data: Triboluminescent

Hazard & Toxicity: Fl. p. 180° (oc). LD₅₀ (rat, orl) 800 mg/kg

Aldrich: T8440-9

Fluka: 93092

Sigma: T1932

>>Derivative: Hydrofluoride

Synonym(s): Triphenylphosphonium fluoride

Molecular Formula: C₁₈H₁₆FP

Molecular Weight: 282.297

Accurate Mass: 282.097365

Percentage Composition: C 76.59%; H 5.71%; F 6.73%; P 10.97%

Physical Description: Liq.

>>Derivative: Hydrochloride (1:2)

Physical Description: Solid

Melting Point: Mp 60.5-61°

>>Derivative: Hydrobromide

Synonym(s): Triphenylphosphonium bromide

CAS Registry Number: 6399-81-1

Molecular Formula: C₁₈H₁₆BrP

Molecular Weight: 343.202

Accurate Mass: 342.037298

Percentage Composition: C 62.99%; H 4.70%; Br 23.28%; P 9.02%

Melting Point: Mp 191-196°

Aldrich: 33838-9

Fluka: 93098

>>Derivative: Hydrobromide (1:2)

CAS Registry Number: 112368-50-0

Melting Point: Mp 203°