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>>Entry Name: Triphenylphosphine

CAS Registry Number: 603-35-0

Ph<sub>3</sub>P

**Molecular Formula:** C<sub>18</sub>H<sub>15</sub>P

**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 CCl<sub>4</sub> or CBr<sub>4</sub> 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 NH<sub>3</sub>; extraction-photometric detn. of Pd (PdCl<sub>4</sub><sup>2(-)</sup> associated with the reagent). Reference material used in elemental microanalysis

**Physical Description:** Plates or prisms (Et<sub>2</sub>O)

**Melting Point:** Mp 80°

**Boiling Point:** Bp 360° (under N<sub>2</sub>)

**Other Data:** Triboluminescent

**Hazard & Toxicity:** Fl. p. 180° (oc). LD<sub>50</sub> (rat, orl) 800 mg/kg

**Aldrich:** T8440-9

**Fluka:** 93092

**Sigma:** T1932

>>Derivative: Hydrofluoride

Synonym(s): Triphenylphosphonium fluoride

**Molecular Formula:** C<sub>18</sub>H<sub>16</sub>FP

**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:** C<sub>18</sub>H<sub>16</sub>BrP

**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°