



>>Entry Name: Di-*tert*-butylphosphine

Synonym(s): Bis(1,1-dimethylethyl)phosphine, 9CI

CAS Registry Number: 819-19-2

HP[C(CH₃)₃]₂

Molecular Formula: C₈H₁₉P

Molecular Weight: 146.212

Accurate Mass: 146.122437

Percentage Composition: C 65.72%; H 13.10%; P 21.18%

Use/Importance: Ligand for metals of Groups VIB, VIIB, IVA, and VIII

Boiling Point: Bp₂ 34-35°

Aldrich: 36271-9

Fluka: 34815

>>Derivative: Hydroiodide

CAS Registry Number: 115880-77-8

Physical Description: Solid

Melting Point: Mp 267-268°

>>Derivative: Oxide

CAS Registry Number: 684-19-5

Molecular Formula: C₈H₁₉OP

Molecular Weight: 162.211

Accurate Mass: 162.117352

Percentage Composition: C 59.24%; H 11.81%; O 9.86%; P 19.09%

Physical Description: Hygroscopic cryst. (Et₂O)

Melting Point: Mp 55-59°. Mp 85-86°

Boiling Point: Bp₉ 112°

Other Data: Tautomeric with Di-*tert*-butylphosphinous acid [DHD55-K](#)

>>Derivative: Sulfide

CAS Registry Number: 81183-69-9

Molecular Formula: C₈H₁₉PS

Molecular Weight: 178.278

Accurate Mass: 178.094507

Percentage Composition: C 53.90%; H 10.74%; P 17.37%; S 17.99%

Physical Description: Phys. props. not reported

Other Data: Tautomeric with di-*tert*-butylphosphinothious acid

References:

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Grim, S.O. *et al.*, *J. Chem. Eng. Data*, 1970, **15**, 497, (*P-31 nmr*)
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Kostyanovskii, R.G. *et al.*, *Org. Mass Spectrom.*, 1972, **6**, 1199; 1976, **11**, 237, (*ms, synth, oxide*)
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Dimitriev, V.I. *et al.*, *Zh. Obshch. Khim.*, 1978, **48**, 1533; *J. Gen. Chem. USSR (Engl. Transl.)*, 1978, **48**, 1405, (*oxide*)
Storzer, W. *et al.*, *Chem. Ber.*, 1981, **114**, 3609, (*oxide, synth*)
Rithner, C.D. *et al.*, *J.A.C.S.*, 1985, **107**, 7823, (*pmr, cmr, P-31 nmr*)
Zschunke, A. *et al.*, *Phosphorus Sulfur Relat. Elem.*, 1985, **22**, 349, (*Li salt, Li-7 nmr, P-31 nmr*)
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Gomelya, N.D. *et al.*, *Zh. Obshch. Khim.*, 1987, **57**, 1702; *J. Gen. Chem. USSR (Engl. Transl.)*, 1987, **57**, 1518, (*deriv*)
Timmer, K. *et al.*, *Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1988, **107**, 248, (*synth*)
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