



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

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

**CAS Registry Number:** 819-19-2

HP[C(CH<sub>3</sub>)<sub>3</sub>]<sub>2</sub>

**Molecular Formula:** C<sub>8</sub>H<sub>19</sub>P

**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:** Bp<sub>2</sub> 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:** C<sub>8</sub>H<sub>19</sub>OP

**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. (Et<sub>2</sub>O)

**Melting Point:** Mp 55-59°. Mp 85-86°

**Boiling Point:** Bp<sub>9</sub> 112°

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

**>>Derivative:** Sulfide

**CAS Registry Number:** 81183-69-9

**Molecular Formula:** C<sub>8</sub>H<sub>19</sub>PS

**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:**

*Aldrich Library of 13C and 1H FT NMR Spectra*, 1992, **1**, 1459A, (*nmr*)

Hoffmann, H. *et al.*, *Chem. Ber.*, 1966, **99**, 1134; 1967, **100**, 692, (*synth*)

Issleib, K. *et al.*, *J. Organomet. Chem.*, 1968, **13**, 283, (*deriv*)

Grim, S.O. *et al.*, *J. Chem. Eng. Data*, 1970, **15**, 497, (*P-31 nmr*)

Crofts, P.C. *et al.*, *J.C.S.(C)*, 1970, 332, (*oxide, ir, ms*)

Kostyanovskii, R.G. *et al.*, *Org. Mass Spectrom.*, 1972, **6**, 1199; 1976, **11**, 237, (*ms, synth, oxide*)

Lappert, M.F. *et al.*, *J.C.S. Dalton*, 1975, 1207, (*pe*)

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*)

Bartlett, R.A. *et al.*, *Inorg. Chem.*, 1987, **26**, 1941, (*P-31 nmr*)

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*)

Yarkevich, A.N. *et al.*, *Zh. Obshch. Khim.*, 1990, **60**, 1511; *J. Gen. Chem. USSR (Engl. Transl.)*, 1990, **60**, 1351, (*oxide, synth, P-31 nmr*)