



>>Entry Name: Diphenylsilane, 9CI

CAS Registry Number: 775-12-2

Type of Compound Code(s): BB0040 BA0090 BB0020 BA0500 BB0010 BA0502
Ph2SiH2

Molecular Formula: C12H12Si

Molecular Weight: 184.312

Accurate Mass: 184.070827

Percentage Composition: C 78.20%; H 6.56%; Si 15.24%

Source/Synthesis: Synth. by LiAlH4 redn. of Ph2SiCl2

Use/Importance: Commercially available reducing agent for aromatic ketones. Acts as deoxygenator of primary and secondary alcohols via thiocarbonyl esters (in presence of Bu3SnH); hydrosilylates carbonyl groups and imines in presence of Rh complex catalysts; in presence of Pd(0) and a Lewis acid, reagent for conjugate redn. of enones, enals and carboxylic acid derivs.; adds 1,2- to enals in presence of Rh(PPh3)3Cl; with Pd(0) and ZnCl2, reagent for hydrogenolysis of allyl acetates

Physical Description: Liq.

Boiling Point: Bp₁₁ 123-126° (Bp₁₃ 95-97°). Bp_{0.5} 75-76°

Density: d₄²⁵ 1

Refractive Index: n_D²⁰ 1.5790

Aldrich: 14848-2

Fluka: 43290

References:

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 701C, (nmr)

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1120C, (ir)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1664D, (ir)

Benkeser, R.A. *et al.*, *J.A.C.S.*, 1952, **74**, 648, (synth)

Kniseley, R.N. *et al.*, *Spectrochim. Acta*, 1959, 651, (ir)

Gilman, H. *et al.*, *J.O.C.*, 1961, **26**, 4817, (synth, use, redn of aromatic ketones)

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Poulin, J.-C. *et al.*, *C. R. Hebd. Seances Acad. Sci. Ser. C*, 1973, **277**, 41, (use, hydrosilylation of ketones)

Kagan, H.B. *et al.*, *J. Organomet. Chem.*, 1975, **90**, 353, (use, hydrosilylation of imines)

Ho, B.Y.K. *et al.*, *Org. Mass Spectrom.*, 1975, **10**, 361, (ms)

Rakita, P.E. *et al.*, *J. Organomet. Chem.*, 1976, **104**, 27, (cmr)

Ishiyama, J. *et al.*, *Bull. Chem. Soc. Jpn.*, 1979, **52**, 2353, (use, hydrosilylation of carbonyl compds)

Ojima, I. *et al.*, *Organometallics*, 1982, **1**, 1390, (use, 1,2-addn to enals)

Keinan, E. *et al.*, *Tet. Lett.*, 1985, **26**, 1353, (use, conjugate redn of enals, enones)

Keinan, E. *et al.*, *J.A.C.S.*, 1986, **108**, 7314, (use, conjugate redn of enals, enones)

Greenspoon, N. *et al.*, *J.O.C.*, 1988, **53**, 3723, (use, hydrogenolysis)

Barton, D.H.R. *et al.*, *Tet. Lett.*, 1990, **31**, 4681, (use)