



>>Entry Name: Phenylsilane, 9CI

CAS Registry Number: 694-53-1

PhSiH₃

Molecular Formula: C₆H₈Si

Molecular Weight: 108.215

Accurate Mass: 108.039527

Percentage Composition: C 66.60%; H 7.45%; Si 25.95%

Source/Synthesis: Synth. from PhSiCl₃ + LiAlH₄

Use/Importance: Commercially available hydrosilylating agent; reagent for vanadium complex catalysed alkene hydrosilylation, and nickel complex catalysed hydrosilylation and telomerisation of dienes; undergoes 1,2-addn. to enones in presence of Rh(PPh₃)₃Cl; reduces chiral phosphine oxides to phosphines with retention of config.

Dehydrogenative coupling in the presence of Group 4 metallocenes gives a polysilane

Physical Description: Liq.

Boiling Point: Bp 118-120°

Density: d₄²⁰ 0.87

Refractive Index: n_D²⁰ 1.5120

Aldrich: 33515-0

Fluka: 79174

References:

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 700C, (nmr)

Inorg. Synth., 1968, **11**, 162, (synth)

Smith, A.L., *Spectrochim. Acta A*, 1968, **24**, 695, (ir)

Birchall, T. *et al.*, *J.C.S.(A)*, 1970, 1401, (synth, pmr)

Freeburger, M.E. *et al.*, *J.O.C.*, 1971, **36**, 933, (synth, ms)

Ermakova, E. *et al.*, *CA*, 1973, **79**, 125369, (uv)

Marsi, K.L. *et al.*, *J.O.C.*, 1974, **39**, 265, (use, redn of phosphine oxides)

Yur'ev, V.P. *et al.*, *Bull. Acad. Sci. USSR, Div. Chem. Sci. (Engl. Transl.)*, 1975, **24**, 1772, (use, telomerisation of dienes)

Chuy, N.D. *et al.*, *Coll. Czech. Chem. Comm.*, 1975, **40**, 875, (cmr, pmr, Si-29 nmr)

Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1975, **5**, 523, (use)

Yur'ev, V.P. *et al.*, *J. Gen. Chem. USSR (Engl. Transl.)*, 1977, **47**, 541, (use, hydrosilylation of alkenes)

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

Perez, D. *et al.*, *J.O.C.*, 1987, **52**, 5570, (use)

Tilley, T.D., *Acc. Chem. Res.*, 1993, **26**, 22, (polym)

Banovetz, J.P. *et al.*, *Organometallics*, 1993, **12**, 4700, (synth, ir, pmr, ms, polym)