



>>Entry Name: Hexabutyl-distannane, 10Cl, 9Cl

Synonym(s): Hexabutyl-ditin

CAS Registry Number: 813-19-4



Molecular Formula: $\text{C}_{24}\text{H}_{54}\text{Sn}_2$

Molecular Weight: 580.111

Accurate Mass: 578.22695

Percentage Composition: C 49.69%; H 9.38%; Sn 40.93%

Source/Synthesis: Synth. from Bu_3SnH and $(\text{Bu}_3\text{Sn})_2\text{O}$, or by Li metal redn. of Bu_3SnCl

Use/Importance: Precursor to Bu_3Sn radicals; on photol., used in iodine transfer radical cyclisations; radical redn./coupling of org. halides, vicinal dihalides $\rightarrow$ alkenes, with predominantly *anti*-elimination; couples with aryl halides and effects intramolecular homocoupling of halides in the presence of Pd complex catalysts; reacts with acyl halides $\rightarrow$ α -diketones in the presence of Pd complex catalysts; in the presence of catalytic $\text{Pd}(\text{PPh}_3)_4$ induces homocoupling of allylic acetates; reagent for photodesulfurisation of 1,3-dithiole-2-thiones $\rightarrow$ tetrahydrofulvalenes

Physical Description: Oil

Boiling Point: $\text{Bp}_{0.02}$ 158°

Other Data: Easily oxidised to $(\text{Bu}_3\text{Sn})_2\text{O}$

Aldrich: 25112-7

Fluka: 52070

Other: Gelest SNH5900

References:

- Aldrich Library of FT-IR Spectra: Vapor Phase*, 1989, **3**, 1682B, (*ir*)
Sawyer, A.K., *J.A.C.S.*, 1965, **87**, 537, (*synth*)
Creemers, H.M.J.C. *et al.*, *Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1965, **84**, 1589, (*synth*)
Neumann, W.P., *The Organic Chemistry of Tin*, Wiley-Interscience, London and New York, 1970, (*rev*)
Mitchell, T.N., *J. Organomet. Chem.*, 1973, **59**, 189; 1974, **70**, C1, (*nmr*)
Ueno, Y. *et al.*, *J.A.C.S.*, 1976, **98**, 7440, (*use, desulfurisation of thiones*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1979, **7**, 165; **14**, 173, (*use*)
Beletskaya, I.P. *et al.*, *J. Organomet. Chem.*, 1983, **250**, 551, (*use, subst of aryl halides*)
Verlhac, J.-B. *et al.*, *Tet. Lett.*, 1985, **26**, 6075, (*use, subst of acyl halides*)
Curran, D.P. *et al.*, *Tet. Lett.*, 1987, **28**, 2477, (*use, radical cyclisations*)
Pereyre, M. *et al.*, *Tin in Organic Synthesis*, Butterworths, 1987, (*rev, uses*)
Majeed, A.J. *et al.*, *Tetrahedron*, 1989, **45**, 993, (*use, subst of aryl halides*)
Grigg, R. *et al.*, *Tet. Lett.*, 1991, **32**, 3859, (*use, homocoupling of halides*)