
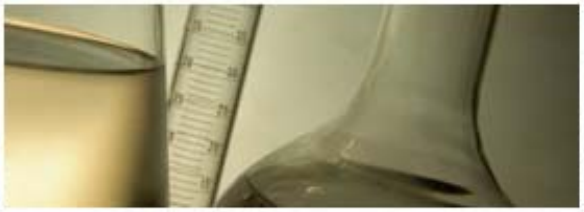

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Research Details :

Research Title : *Organotin compounds containing a bulky (Me3Si)(3)C or related ligand. Crystal structures of {(Me3Si)(3)CMe(O2NO)Sn}(2)O, (PhMe2Si)(3)CSnMeCl2 and (PhMe2Si)(3)CSnCl3*

Organotin compounds containing a bulky (Me3Si)(3)C or related ligand. Crystal structures of {(Me3Si)(3)CMe(O2NO)Sn}(2)O, (PhMe2Si)(3)CSnMeCl2 and (PhMe2Si)(3)CSnCl3

Descriptipn : Some compounds having very bulky ligands, mainly (Me3Si)(3)C (denoted by Tsi) or (PhMe2Si)(3)C (denoted by Tpsi), attached to functional tin centres have been studied. Treatment of TsiSnR(2) Cl, R = Me or Ph, with one equivalent of ICl gave the corresponding chloride TsiSnRCl(2), and use of an excess of ICl gave TsiSnCl(3) in both cases. Reaction of either chloride with one equivalent of Br-2 gave the dibromide TsiSnRBr(2); when an excess of Br-2 was used TsiSnMe(2)Cl still gave the dibromide but TsiSiPh(2)Cl gave the tribromide TsiSnBr(3). Reaction of TsiSnMe(2)Br with AgSCN or Ag2O gave TsiSnMe(2)NCS and (TsiSnMe(2))(2)O, respectively, but when the crude product from the reaction of TsiSnMeBr(2) with AgNO3 was recrystallized from MeOH the nitrate-oxide {TsiMe (O2NO)Sn}(2)O was obtained. In a seemingly previously unreported type of reaction, the alkoxide TsiSnMe(2)OEt reacted with ICl, Br-2, or I-2 to give TsiSnMe(2)X, X = Cl, Br, or I, respectively, and Bu3SnOEt likewise reacted with ICl to give Bu3SnCl. The chlorides TsiSnMe(2)Cl and TsiSnMeCl(2) gave the hydrides TsiSnMe(2)H and TsiSnMeH(2) on treatment with LiAlH4, but in the case of TpsiSnMe(2)Cl the Tpsi-Sn bond was cleaved to give TpsiH. The compound (Me3Si)(2)C(SnMe2Ph)(SiMe2Cl) reacted with a 1 M proportion of AgBF4 in CH2Cl2 with cleavage of the Sn-Ph bond to give the difluoride (Me3Si)(2)C(SnMe2F)(SiMe2F). The crystal structures of the monomeric compounds {TsiMe(O2NO)Sn}(2)O, TpsiSnMeCl(2) and TpsiSnCl(3) are reported; {TsiMe(O2NO)Sn}(2)O provides the first example of unidentate bonding of an NO, group to four-coordinate tin. (C) 1998 Elsevier Science S.A. All rights reserved.

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