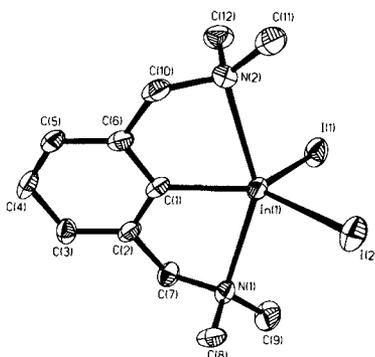


## Index Abstracts

The reactions of the "two-arm" aryllithium  $[2,6-(\text{Me}_2\text{NCH}_2)_2\text{C}_6\text{H}_3]\text{Li}$  with  $\text{InI}_3$  and  $i\text{-PrInI}_2$  afforded the diiodide  $[2,6-(\text{Me}_2\text{NCH}_2)_2\text{C}_6\text{H}_3]\text{InI}_2$  (shown) (3) and the monoiodide  $[\{2,6-(\text{Me}_2\text{NCH}_2)_2\text{C}_6\text{H}_3\}\{i\text{-Pr}\}\text{InI}]_x$  (4), respectively. The corresponding "one-arm" derivatives  $[\{2-(\text{Me}_2\text{NCH}_2)\text{C}_6\text{H}_4\}\text{InI}_2]_2$  (5) and  $[\{2-(\text{Me}_2\text{NCH}_2)\text{C}_6\text{H}_4\}\{i\text{-Pr}\}\text{InI}_2]$  (6) were formed *via* the reactions of  $[2-(\text{Me}_2\text{NCH}_2)\text{C}_6\text{H}_4]\text{Li}$  with  $\text{InI}_3$  and  $i\text{-PrInI}_2$ , respectively.

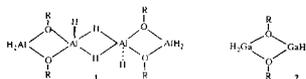


Alan H. Cowley, François P. Gabbaï, Harold S. Isom, Andreas Decken, and Robert D. Culp

Structural Diversity in Organoindium Iodides

9-19

Treatment of di-*t*-butyl ketone with excess  $\text{H}_3\text{MNMe}_3$ ,  $\text{M} = \text{Al}$  or  $\text{Ga}$ , affords  $[\text{H}_2\text{M}\{\mu\text{-OC}(\text{H})\text{Bu}^t\}]_2$  which for  $\text{M} = \text{Al}$  associated in the solid via two symmetrical bridging hydrides between single aluminium centres from different dimers such that the metal centres are either four or five coordinate, as distorted tetrahedra or square pyramids, 1, whereas for  $\text{M} = \text{Ga}$  discrete dimers are present, 2.

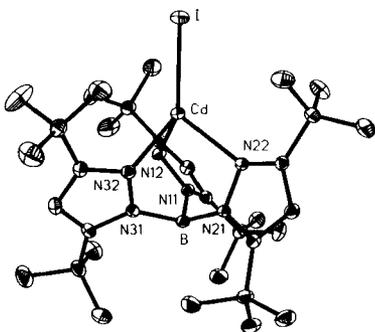


George A. Koutsantonis, Fu Chin Lee and Colin L. Raston

Reduction of  $\text{Bu}^t\text{C}\equiv\text{O}$  by  $\text{H}_3\text{MNMe}_3$  ( $\text{M} = \text{Al}$  or  $\text{Ga}$ ): Product Association *via* Bridging Alkylaloxides ( $\text{M} = \text{Al}$ ,  $\text{Ga}$ ) and Hydrides ( $\text{M} = \text{Al}$ )

21-28

The synthesis of the new sterically demanding *tris* (3,5-di-*t*-butylpyrazolyl) hydroborato ligand,  $[\text{Tp}^{\text{Bu}_2}]$ , in which both the 3- and 5-positions of the pyrazolyl group are occupied by bulky *t*-butyl substituents is described. The structural characterization of several derivatives, namely  $\text{k}[\text{Tp}^{\text{Bu}_2}]$ ,  $\text{Cs}[\text{Tp}^{\text{Bu}_2}]$ ,  $\text{Tl}[\text{Tp}^{\text{Bu}_2}]$ ,  $[\text{Tp}^{\text{Bu}_2}]\text{ZnI}$ , and  $[\text{Tp}^{\text{Bu}_2}]\text{CdI}$  (shown), demonstrates that the  $[\text{Tp}^{\text{Bu}_2}]$  ligand adopts a highly twisted propeller-like configuration, a consequence of intra-ligand repulsive interactions between the 5-*t*-butyl substituents.



Conor M. Dowling, Douglas Leslie, Malcolm H. Chisholm, and Gerard Parkin

The Synthesis and Structural Characterization of the Sterically Demanding Tris (3,5-di-*t*-butylpyrazolyl) hydroborato Ligand,  $[\text{Tp}^{\text{Bu}_2}]$ : A Highly Twisted, Propeller-Like, Ligand System

29-52

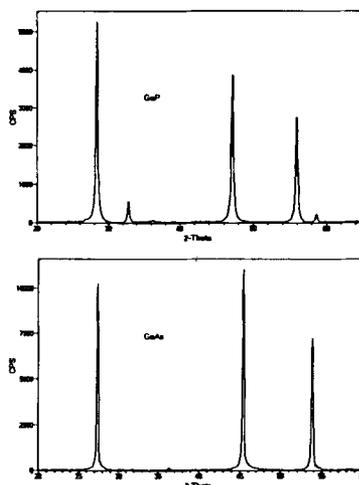
The hydrosilylation of olefins with allyldichlorosilane in the presence of chloroplatinic acid diluted with isopropanol gave allylalkyldichlorosilanes, retaining the allyl group. When the olefin was used in fivefold excess or more relative to allyldichlorosilane, allylalkyldichlorosilanes were obtained in good yields (63–89%), and the formation of double hydrosilylation products was reduced to less than 6%. The isomerization of allylsilane to 1-propenylsilane was suppressed by lowering reaction temperatures below 100°C. This hydrosilylation of olefins with allyldichlorosilane is a good synthetic route to an allyl group containing organodichlorosilanes.

Bong Woo Lee, Bok Ryul Yoo, Seung Ho Yeon, Kang-Bong Lee, and Il Nam Jung

Hydrosilylation of Olefins with Allyldichlorosilane: A Convenient Route to Allyl Group Containing Organodichlorosilanes

53–60

The phenylated group 13/15 compounds,  $\text{Ph}_2\text{MEPh}_2$  ( $\text{M} = \text{Ga}$  and  $\text{In}$ ;  $\text{E} = \text{P}$  and  $\text{As}$ ), were prepared in 73–83% yield from the reaction of  $\text{Ph}_3\text{M}$  ( $\text{M} = \text{Ga}$  and  $\text{In}$ ) with  $\text{Ph}_2\text{EH}$  ( $\text{E} = \text{P}$  and  $\text{As}$ ). Pyrolysis of  $\text{Ph}_2\text{GaAsPh}_2$  and  $\text{Ph}_2\text{GaPPh}_2$  at 450°C produced crystalline GaAs and GaP, which were characterized by X-ray powder diffraction. The effect of temperature on the synthesis of GaAs and GaP was investigated. Phenyl-group migration is the dominant reaction pathway en route to GaAs and GaP.

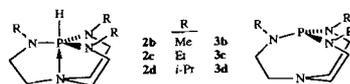


Youlin Pan and Philip Boudjouk

Phenylated Group 13/15 Compounds: Convenient Precursors to Phase Pure Gallium Arsenide and Gallium Phosphide

61–67

The new azaphosphatranes **2c** and **2d** and the corresponding proazaphosphatranes **3c** and **3d** were prepared, and the structures of **2d** and **3d** were determined by X-ray means. Compound **2d** displays a transannular bond while **3d** does not, but it does exhibit a planar bridgehead nitrogen. Although **3c** is unexpectedly somewhat more basic than **3d**, the latter compound is a more efficient catalyst than **3b** for trimerizing isocyanates to isocyanurates.

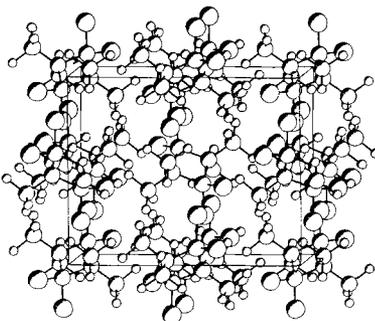


Andrzej E. Wróblewski, Jiri Pinkas and John G. Verkade

Strongly Basic Proazaphosphatranes:  $\text{P}(\text{EtNCH}_2\text{CH}_2)_3\text{N}$  and  $\text{P}(\textit{iso}\text{-PrNCH}_2\text{CH}_2)_3\text{N}$

69–79

The first example of a gallium-mixed-pnicogen ring compound,  $I_2GaAs(SiMe_3)_2Ga(I)_2P(SiMe_3)_2$ , was synthesized by two different methods: equilibration of the related dimeric gallium-arsenic and gallium-phosphorus compounds  $[I_2GaAs(SiMe_3)_2]_2$  and  $[I_2GaP(SiMe_3)_2]_2$  in a 1:1 mole ratio, and a direct reaction of  $GaI_3$  with  $As(SiMe_3)_3$  and  $P(SiMe_3)_3$  in a 2:1:1 mole ratio. Characterization data for  $I_2GaAs(SiMe_3)_2Ga(I)_2P(SiMe_3)_2$  include a single crystal X-ray structure determination (unit cell diagram shown).

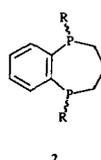
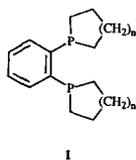


Richard L. Wells, Steven R. Aubuchon, Michael S. Lube and Peter S. White

Synthesis and Complete Characterization of a Gallium-Mixed-Pnicogen Four-Membered-Ring Compound:  $I_2GaAs(SiMe_3)_2Ga(I)_2P(SiMe_3)_2$

81-88

The complex  $[Cu\{1,2-C_6H_4(PH_2)_2\}_2]CF_3SO_3$  is readily alkylated at phosphorus by terminal and bridging alkyl halides in the presence of base to give the bis(tertiary phosphines) 1,2-phenylenebis-di-methylphosphine, -methylphosphine, -phospholane, and -phosphorinane (**1**;  $n=1$  or 2). The corresponding reaction with 1,3-dibromopropane gives putative cage and macrocyclic tetra(tertiary phosphines) related to 1,2-phenylenebis(phosphetane), as well as  $(R^*, R^*)-(\pm)^*$  ( $R^*, S^*$ )-2,3,4,5-tetra-hydro-1*H*-1,5-benzodiphosphepine (**2**;  $R=H$ ) and the derivatives (**2**;  $R=prop-1-or-2-enyl$ ).

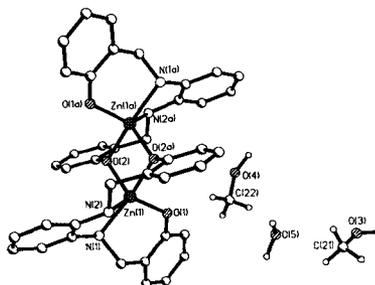


Yew Beng Kang, Michael Pabel, Devandra D. Pathak, Anthony C. Wills and S. Bruce Wild

Copper(I)-Facilitated Methylation and Cyclic Alkylation of 1,2-Phenylenebis(phosphine)

89-98

The tetradentate  $SalaH_4$  ligands,  $SaleanH_4$ ,  $SalpanH_4$ ,  $SalbanH_4$ ,  $SalhanH_4$ ,  $SalophanH_4$  and  $SalomphanH_4$  have been synthesized, fully characterized and used to prepare the series of zinc complexes,  $[SaleanH_2Zn]_2$  (**1**),  $[SalpanH_2Zn]_2$  (**2**),  $[SalbanH_2Zn]_2$  (**3**),  $[SalhanH_2Zn]_2$  (**4**),  $[SalophanH_2Zn]_2$  (**5**), and  $[SalomphanH_2Zn]_2$  (**6**). Compounds (**2**) and (**5**) have been structurally characterized with single-crystal X-ray diffraction. (as shown for **5**)

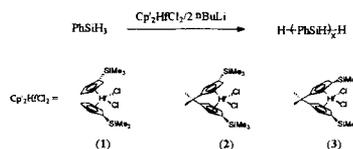


David A. Atwood, Jessica Benson, Jolin A. Jegier, Ned F. Lindholm, Kyli J. Martin, Randy J. Pitura and Drew Rutherford

Synthesis and Structural Characterization of Tetradentate ( $N_2O_2$ ) Ligand Complexes of Zinc

99-113

Complexes **1–3**, in combination with  $n\text{BuLi}$ , are dehydrocoupling catalysts for the condensation of  $\text{PhSiH}_3$  to polysilanes. The incorporation of the trimethylsilyl substituent produces a slower coupling catalyst than  $\text{Cp}_2\text{HfCl}_2$  but provides polysilanes of comparable molecular weight. The rate of condensation of  $\text{PhSiH}_3$  with **2** and **3** is higher than with  $[\text{Me}_2\text{C}(\text{C}_5\text{H}_4)_2]\text{HfCl}_2$ , but the average molecular weight of the resultant polysilanes are lower.

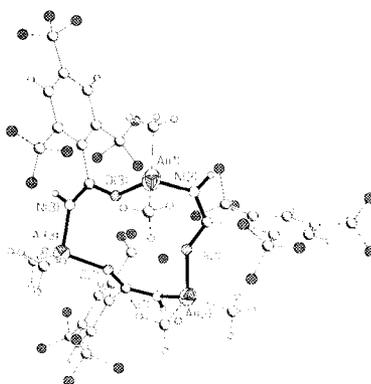


Raef M. Shaltout and Joyce Y. Corey

Catalytic Dehydrocoupling of Hydrosilanes with Trimethylsilyl Substituted Hafnocene and *Ansa*-Hafnocene Complexes

115–126

In this paper we report on the first trimeric compound  $[(\text{CF}_3)_3\text{C}_6\text{H}_2\text{C}(\text{O})\text{N}(\text{H})\text{AlMe}_2]_3$  consisting of an  $\text{Al}_3\text{N}_3\text{C}_3\text{O}_3$  core. This compound was obtained by the reaction of  $\text{AlMe}_3$  and 2,4,6-tris (trifluoromethyl) benzamide.

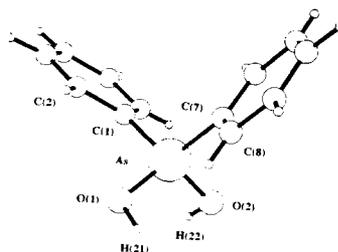


Andreas Klemp, Isabel Usón, Jens-Thomas Ahlemann, Thomas Belgardt, Jens Storre and Herbert W. Roesky

Synthesis and Structure of Metal-Containing Eight- and Twelve-Membered  $\text{M}-\text{N}-\text{C}-\text{O}$ -Heterocycles ( $\text{M}=\text{Al}, \text{Ga}, \text{In}$ )

127–138

Diphenylarsenic (III) chloride can be oxidized with *t*-butyl hydroperoxide to  $\text{AsPh}_2\text{OCl}$ , which from mass and IR spectroscopy is not monomeric but most probably a cyclic oligomer  $(\text{AsPh}_2\text{OCl})_n$  where  $n=3$  or 4. In the presence of moisture, it is converted to a monohydrate, shown by x-ray crystallography to be the salt  $[\text{AsPh}_2(\text{OH})_2]\text{Cl}$ .

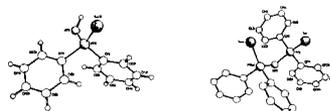


I. Gary Southerington, Michael J. Begley, and D. Bryan Sowerby

Diphenylarsenic (V) Oxide Chloride and the Crystal Structure of Dihydroxodiphenylarsonium Chloride

139–143

The preparation and characterization of the title compounds is reported. The selenium compounds have been characterized by x-ray crystallography.

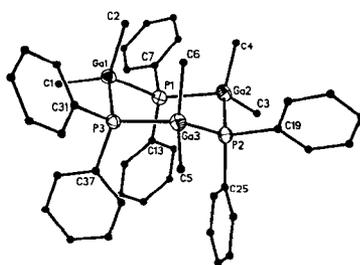


Mark J. Pilkington, Alexandra M. Z. Slawin, David J. Williams, and J. Derek Woollins

The Preparation and Structures of  $\text{Ph}_2\text{P}(\text{E})\text{OH}$  and  $\text{Ph}_2\text{P}(\text{E})\text{OP}(\text{E})\text{Ph}_2$  ( $\text{E}=\text{S}, \text{Se}$ )

145–151

The trimeric phosphinogallane  $[\text{Me}_2\text{Ga-PPh}_2]_3$ , prepared from the room temperature reaction of trimethylgallium with diphenylphosphine in toluene, resides about a virtually idealized  $\text{Ga}_3\text{P}_3$  six-membered ring in a chair conformation with a mean Ga-P bond distance of 2.433(1) Å.

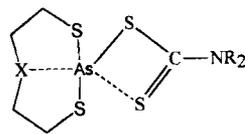


Gregory H. Robinson, Jaye A. Burns, and William T. Pennington

Synthesis and Molecular Structure of  $[\text{Me}_2\text{Ga-PPh}_2]_3$

153-158

Compounds (1) and (2) have been prepared in order to determine the behavior of the chloro thia-arsocanes toward a 1,1-dithio ligand, and to determine the coordination pattern and the modification of the transannular interaction. The structure determination shows that 1 and 2 are monomeric and contain an asymmetric monometallic biconnective dithiocarbamate ligand with a large distortion in the geometry around the As and a weakness in the heterocyclic arsocane transannular secondary interaction.



X = O, R<sub>2</sub> = Morpholinyl (1)

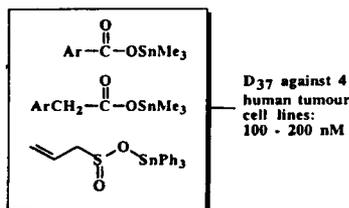
X = S, R<sub>2</sub> = Diethyl (2)

Raymundo Cea-Olivares, Mirna R. Estrada, Georgina Espinosa-Pérez, Ionel Haiduc, Patricia García Y García, Marcela López-cardoso, Moisés López-Vaea and Ave-María colero-Villegas

1-Oxa-4,6-Dithia-5-Arsocane and 1,3,6-Trithia-2-Arsocane Dithiocarbamates Competition Between Transannular and Exocyclic Secondary Bonding to Arsenic

159-164

Structurally diverse triphenyltin esters exhibit almost identical *in vitro* antitumor activity to the potent triphenyltin benzoates and greater activity than cisplatin. This activity is independent of the structure of the ester moiety and comparable to triphenyltin hydroxide, suggesting hydrolysis to a common, cytotoxic tin intermediate.



Carolyn J. Tranter, Susan J Berners Price, Janelle Cutts, Peter G. Parsons, Gavin Rintoul and David J. Young

A Comparison of the Potent *in vitro* Antitumor Activity of Triphenyltin Benzoates with that of Related Tin Compounds

165-167