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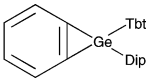
Editor's Page

The molecule on the cover of this issue of *Organometallics* is a germacyclopropabenzene, **1**. Its existence as a stable, isolable compound, mp 235−237 °C (dec), is due to the large amount of organic shrubbery to the right of the germanium atom: two very bulky substituents, Tbt, 2,4,6-tris[bis(trimethylsilyl)methyl]phenyl, and Dip, 2,6-diisopropylphenyl, which very effectively shield the germanium atom from destructive external attack. The silicon analogue of **1** is even more stable, both thermodynamically and kinetically. Germacyclopropabenzene **1** was prepared by the reaction of the unusual *gem*-dilithium reagent Tbt(Dip)$GeLi_2$ with 1,2-dibromobenzene. Its structure, determined by X-ray diffraction, was reported in this journal in 2002 (*Organometallics* **2002**, *21*, 4309) by Norihiro Tokitoh of the Institute of Chemical Research of Kyoto University and co-workers. This compound and its silicon analogue are the subject of the review in this issue by Takahiro Sasamori and Professor Tokitoh. They are only two of the many otherwise kinetically unstable compounds to which sterically derived kinetic stability is imparted by the presence of such bulky substituents. The use of the $(Me_3Si)_2CH$ group to stabilize low-coordinate and radical species was pioneered by Michael Lappert of the University of Sussex, and substituting three $(Me_3Si)_2CH$ groups on a phenyl ring gives a superbulky substituent that provides outstanding steric protection to whatever atom or group to which it is attached.



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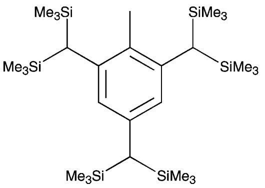
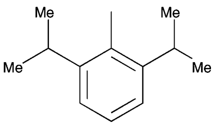


Tbt



Dip

Professor Tokitoh became active in group 14 chemistry as a research associate, then assistant professor at the University of Tsukuba with Professor Wataru Ando. In 1989 he joined Professor Renji Okazaki at the University of Tokyo as assistant professor, later associate professor. A very productive collaboration resulted, first in the area of organochalcogen chemistry, but then also in group 14 chemistry, in part combined with group 16. It was during this time that the very useful Tbt substituent was developed and applied very creatively to the kinetic stabilization of systems that without such steric protection, with only alkyl or unsubstituted phenyl substituents, would not survive. The unusual and fascinating systems investigated included low-coordinate species, compounds containing group 14 element−element double bonds, for example, Ge═S, Sn═Se, Pb═S, Ge═Te, mono- and polynuclear aromatic compounds that contain group 14 elements (Si, Ge, Sn) as ring members, and other group 14 and group 15 exotica. Clothed in their bulky carbonaceous overcoats, such novel species could be isolated as pure compounds. Often their molecular structures could be determined by X-ray diffraction.

Such sterically protected compounds do undergo some, albeit limited, reactions. Thus, as described in the present review, the sila- and germacyclopropabenzenes react, for instance, with the chalcogens and with transition metal carbonyls. They are by no means chemical dead-ends.

This very fruitful, innovative chemistry has been very actively continued independently by Professor Tokitoh, first, for two years, as full professor at the Institute for Fundamental Organic Chemistry at Kyushu University, and since 2004 at the Institute of Chemical Research of Kyoto University. There the coauthor of the present review is an assistant professor in his group.

For those interested in the broader aspects of Professor Tokitoh's work, he has published some interesting reviews: *Acc. Chem. Res.* **2000**, *33*, 625; *Coord. Chem. Rev.* **2000**, *210*, 251; *Acc. Chem. Res.* **2004**, *37*, 86; *Bull. Chem. Soc. Jpn.* **2004**, *77*, 429.

The cover molecule figure was kindly provided by Professor Arnold L. Rheingold.

Dietmar Seyferth
Editor

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