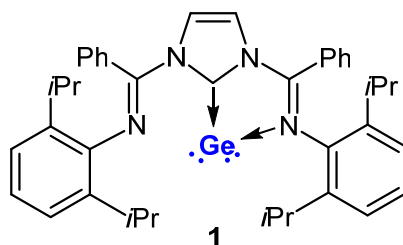


Ge(0) COMPOUND WITH AMBIPHILIC REACTIVITY

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Group 14 compounds in the zero-oxidation state, $L \rightarrow E \leftarrow L$ (L = a two-electron donor), were discovered only a decade ago.^[1-3] These compounds are cumulatively called tetrylones and are now known for all tetrrels. They possess two lone pairs centered on the group 14 element and exhibit nucleophilic properties.^[4,5] We have recently succeeded in preparing a new germylone compound **1** supported by a diimino-carbene pincer (dimNHC), which exhibits ambiphilic reactivity in the oxidative addition of HCl, MeI, PhI and oxidative cyclization with a quinone.^[6] Interestingly, the oxidative addition reactions are accompanied by the little known migration of the R group from germanium to the NHC ligand to afford halo-alkyl germylenes. Further examples of this unusual ambiphilic reactivity will be discussed.



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- [1] Mondal, K. C.; Roesky, H. W.; Schwarzer, M. C.; Frenking, G.; Niepötter, B.; Wolf, H.; Herbst-Irmer, R.; Stalke, D. *Angew. Chem. Int. Ed.* 2013, 52, 2963.
- [2] Xiong, Y.; Yao, S.; Inoue, S.; Epping, J. D.; Driess, M. *Angew. Chem. Int. Ed.* 2013, 52, 7147.
- [3] Chu, T.; Belding, L.; van der Est, A.; Dudding, T.; Korobkov, I.; Nikonov, G. I., *Angew. Chem. Int. Ed.* 2014, 53, 2711.
- [4] Majhi, P. K.; Sasamori, T. *Chem. Eur. J.* 2018, 24, 9441.
- [5] Yao, S.; Xiong, Y.; Driess, M. *Acc. Chem. Res.* 2017, 50, 2026–2037.
- [6] Nguyen, M.T.; Gusev, D. G.; Dmitrienko, A.; Gabidullin, B.M.; Spasyuk, D.; Pilkington, M.; Nikonov, G. I. *J. Am. Chem. Soc.* 2020, 142, 5852.