Ge(0) compound with ambiphilic reactivity

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Group 14 compounds in the zero-oxidation state, L→E←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 tetreles. 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. We now report the analogous silicon compound **2**.

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.
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.